October 29, 2004

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Mr. Oliver:

These are comments on the Harlan Categorical Exclusion (CE) Project submitted by the Native Forest Network, Friends of the Bitterroot, and the Ecology Center. Thank you for attending the field trip on October 9th and for holding the Decision Memo until we could submit comments.

It appears that this proposal is within the analysis area of the Bitterroot Burned Area Recovery (BAR) Project. Categorically excluding more logging in this area is **not consistent with the Settlement Agreement** signed by the Ecology Center and others. For example, cumulative effects of this and the BAR Project simply cannot be assessed in the context of a Categorical Exclusion (CE).

The FS seems to fail to understand that dead, diseased, dying, etc. trees have a role in the forest—they are not just "opportunities" for logging. Please disclose the amounts of snags, recruitment snags, and down woody debris previous logging operations have left in previous similarly logged units, so that the public can tell if you've met Forest Plan Standards in those units. Please perform surveys to determine the amounts of snag habitat and down woody debris exist in similarly stocked unmanaged areas for comparison.

Old Growth

Please disclose how stands to be logged compare to old-growth criteria. In order to disclose such information, please provide all the details, in plain language, of these areas' forest characteristics (the various tree components' species, age and diameter of the various tree components, canopy closure, snag density by size class, amounts of down logs, understory composition, etc.). In the project documents you sent me, there was no description of how old growth inventories were made or what criteria were used to assess stand classification.

Please disclose whether the amount of existing old growth meets standards and other required levels for old-growth habitat. The FS must consider the likelihood that the areas proposed for logging will have old-growth habitat characteristics enhanced, not destroyed by the same natural processes the FS is using as a reason for the logging proposal. Please disclose if the proposed cutting units were, still are, or will, in the foreseeable future, qualify as old growth. What criteria or definition(s) of old growth were used to determine whether old growth exists in the Harlan CE project area? Please disclose how the project will impact the old-growth wildlife species, and mature forest associated species and how the cumulative effects of the intensive logging of all trees, and in particular old growth and large diameter trees, in the Rye Creek drainage has had and will have on these species.

Please disclose, using tables and maps, the amounts, locations, sizes, and connectivity of all old-growth stands in the project area. Disclose whether it is actual old growth (meets all criteria) or whether it is "recruitment" old growth. Disclose whether or not you have compared all stands proposed for logging and/or burning to the old-growth criteria. Please disclose the methodology used to identify each stand as old growth, recruitment old growth, or not old growth.

For the proposal to be consistent with the Forest Plan, enough habitat for viable populations of old-growth dependent wildlife species is needed over the landscape.

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

> Population viability analysis is not plausible or logical at the project level such as the scale of the Dry Fork Vegetation and Recreation Restoration EA. Distributions of common wildlife species as well as species at risk encompass much larger areas than typical project areas and in most cases larger than National Forest boundaries. No wildlife species that presently occupy the project area are at such low numbers that potential effects to individuals would jeopardize species viability. No actions proposed under the preferred alternative would conceivably lead to loss of population viability. (Lewis and Clark NF, Dry Fork EA Appendix D at p. 9.)

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

The FS has stated: "Well distributed habitat is the amount and location of required habitat which assure that individuals from demes,[1] distributed throughout the population's existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible." (Mealey 1983.)

The wildlife Biological Evaluation (BE) and Biological Assessment (BA) states, "The combination of previous harvest and severe wildfires on public and private lands has resulted in very little suitable habitat for any wildlife species associated with forested conditions in this area." It continues stating that although the fires of 2000 created large numbers of standing snags "most of these burned and/or beetle-infested acres have been salvage logged since 2001…."

The Wildlife BE/BA further states that in many of the Harlan CE cutting units –units 1, 1a, and 3 which comprise nearly half of the acreage of the Harlan CE--"There are few older snags, down logs, shrubs or thickets of saplings."

Despite these findings that very little old growth or potential old growth, live or dead, exist and that little potential for future creation of these ecosystem components exist and the known importance of such ecosystem characteristics to old growth associated species, cavity nesting birds, and numerous game and prey species the Harlan CE proposes to remove much of the potential present and future legacy structures. Whether the stands proposed to be cut in the Harlan CE currently meet old growth definitions may not be the most relevant point because large diameter trees, snags, and downed wood are rare and are important for many species including old growth associated species. The large snags created by the insects, disease or fires that are proposed to be cut in the Harlan CE constitute a substantial portion of the legacy structures that will provide large snag and large downed woody debris for the next several hundred years. In a watershed where so much of these legacy structures have already been removed, how can the FS justify the logging proposed in the Harlan CE?

The cumulative effects analysis does not accurately assess or address the cumulative impacts of the removal of so much of the forested canopy, large snags, future large downed woody debris, and the other habitat functions of these legacy structures. There is no explanation in the specialist reports or other project files of why these cumulative impacts can be said to have had no significant impact on the viability of species within the Rye Creek watershed or the larger surrounding landscape. If management activities have already resulted in significant impacts to species then, even if the Harlan CE is thought to *likely* have little additional impacts, no further management which could *potentially* have further negative impacts should be allowed.

Invasive Species/Weeds

Please include in your analysis the possible effects of noxious weed introduction on Sensitive plant populations and other components of biodiversity. Please include in the analysis the results of monitoring of noxious weed infestation from past management actions in the Forest.

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

Soils

There is absolutely no mention of soils—not on current conditions, effects of past management and cumulative effects, or desired future condition—in the documents we received from the FS. The Rye Creek watershed as a whole has experienced widespread and intensive timber harvest in the past, heavy roading in many areas, a swath of fires, and some off road vehicle use. The area has been shown to have sustained widespread and pervasive soil damage and compaction because of this. What are the cumulative impacts of all of this activity and how long will it take to recover? How does this match the desired future condition for the area and the Forest Plan?

Please fully analyze and disclose cumulative impacts on soil productivity. Disclose the areas of unstable and highly erosive soils that would result in mass movement and erosion. Include maps that show all land and soil types in the NEPA document. Please analyze how much soil compaction and surface erosion has occurred in the proposal area because of past actions and what the likely increases will be for the proposed action.

Please disclose the scientific research information you have to indicate that "mitigation" measures such as helicopter yarding, winter logging, and skidding on slash mat materials will minimize damage to soils.

The FS has essentially admitted that it is in the dark as far as doing scientific research on soil productivity changes following management activities. In response to comments on the Black Ant Salvage DEIS, Lewis & Clark NF, USDA Forest Service, 2002 states:

> Soil Quality Standards "provide benchmark values that indicate when changes in soil properties and soil conditions would result in significant change or impairment of soil quality based on available research and Regional experience" (Forest Service Manual 2500, Region 1 Supplement 2500-99-1, Chapter 2550 – Soil Management, Section 2554.1).
>
> A formal research study, the "Long Term Soil Productivity Study," is currently being conducted by the Research Branch of U.S. Department of Agriculture, Forest Service to validate these soil quality standards.

The Forest Management Handbook at FSH 2509.18 directs the FS to do validation monitoring to "Determine if coefficients, S&Gs, and requirements meet regulations, goals and policy" (2.1 – Exhibit 01). It asks what we are asking: "Are the threshold levels for soil compaction adequate for maintaining soil productivity? Is allowing 15% of an area to be impaired appropriate to meet planning goals?" The Ecology Center recently asked the Northern Region if they have ever performed this validation monitoring of its 15% Standard, in their February 26, 2002 Freedom of Information Act request to the Regional Forester, requesting:

> The Forest Management Handbook at FSH 2509.18 provides the Forest Service with examples of validation monitoring to "Determine if coefficients, S&Gs, and requirements meet regulations, goals and policy." It asks "Are the threshold levels for soil compaction adequate for maintaining soil productivity? Is allowing 15% of an area to be impaired appropriate to meet planning goals?" We request all documentation of validation monitoring by the Forest Service in the Northern Region that answers those two questions.

The Regional Office's reply letter stated that there is no documentation that responds to this request. If the BNF is aware of any new documentation that would respond to this request now, we ask that you please disclose it.

Harvey et al., 1994 state:

> The ...descriptions of microbial structures and processes suggest that they are likely to provide highly critical conduits for the input and movement of

> materials within soil and between the soil and the plant. Nitrogen and carbon have been mentioned and are probably the most important. Although the movement and cycling of many others are mediated by microbes, sulfur phosphorus, and iron compounds are important examples.
>
> The relation between forest soil microbes and N is striking. Virtually all N in eastside forest ecosystems is biologically fixed by microbes... Most forests, particularly in the inland West, are likely to be limited at some time during their development by supplies of plant-available N. Thus, to manage forest growth, we must manage the microbes that add most of the N and that make N available for subsequent plant uptake.

(Internal citations omitted.)

Insects, Fungi, & Disease

Please disclose your inventory or monitoring of indicators, including lichens, fungi, insects, etc. since these can and do define existing and probable future forest conditions, especially related to natural recovery following fire. Lichens in particular, while capturing atmospheric nitrogen for later release to higher plants and trees, are sensitive indicators of atmospheric and ground conditions and cannot be ignored in attempts at ecosystem management. Fungi and insects indicate and largely drive forest condition. Those that act as antagonists or parasites to destructive forms like root disease fungi or bark beetles should be recognized, as should tree pathogens and pests.

The rationale and analysis of this proposal must look at the forest as an ecosystem with interrelationships coequal to timber production. Please use the ecosystem management approach to assess fungal and insect organisms as capable of operating in a self-regulatory manner and exist as beneficial organisms within the project area. Some species of trees, native insects, and disease organisms are often described by the FS as "invasive" or somehow bad for the ecosystem. Such contentions that conditions are somehow "unnatural" runs counter to more enlightened thinking on such matters. For example, Harvey et al., 1994 state:

> Although usually viewed as pests at the tree and stand scale, insects and disease organisms perform functions on a broader scale.
>
> …Pests are a part of even the healthiest eastside ecosystems. Pest roles—such as the removal of poorly adapted individuals, accelerated decomposition, and reduced stand density—may be critical to rapid ecosystem adjustment
>
> …In some areas of the eastside and Blue Mountain forests, at least, the ecosystem has been altered, setting the stage for high pest activity (Gast and others, 1991). This increased activity does not mean that the ecosystem is broken or dying; rather, it is demonstrating functionality, as programmed during its developmental (evolutionary) history.

The FS often makes a case for logging as a way to reduce insect and disease damage to timber stands. As far as we are aware, the FS has no empirical evidence to indicate its "treatments" for "forest health" decrease, rather than increase, the incidence of insects and diseases in the forest. Since the FS doesn't cite research that proves otherwise in its NEPA analyses, we can only conclude that "forest health" discussions are unscientific and biased toward logging as a “solution.” Please consider the large body of research that indicates logging, roads, and other human caused disturbance promote the spread of tree diseases and insect infestation.

For example, multiple studies have shown that annosus root disease (Heterobasidion annosum, formerly named Fomes annosus), a fungal root pathogen that is often fatal or damaging for pine, fir, and hemlock in western forests, has increased in western forests as a result of logging (Smith 1989). And researchers have noted that the incidence of annosus root disease in true fir and ponderosa pine stands increased with the number of logging entries (Goheen and Goheen 1989). Large stumps served as infection foci for the stands, although significant mortality was not obvious until 10 to 15 years after logging (Id.).

The proportion of western hemlock trees infected by annosus root disease increased after precommercial thinning, due to infection of stumps and logging equipment wounds (Edmonds et al. 1989, Chavez, et al. 1980).

Armillaria, a primary, aggressive root pathogen of pines, true firs, and Douglas-fir in western interior forests, spreads into healthy stands from the stumps and roots of cut trees (Wargo and Shaw 1985). The fungus colonizes stumps and roots of cut trees, then spreads to adjacent healthy trees. Roots of large trees in particular can support the fungus for many years because they are moist and large enough for the fungus to survive, and disease centers can expand to several hectares in size, with greater than 25% of the trees affected in a stand (id.). Roth et al. (1980) also noted that Armillaria was present in stumps of old-growth ponderosa pine logged up to 35 years earlier, with the oldest stumps having the highest rate of infection.

Filip (1979) observed that mortality of saplings was significantly correlated to the number of Douglas-fir stumps infected with Armillaria mellea and laminated root rot (Phellinus weirii). McDonald, et al. (1987) concluded the pathogenic fungus Armillaria had a threefold higher occurrence on disturbed plots compared to pristine plots at high productivity sites in the Northern Rockies. Those authors also reviewed past studies on Armillaria, noting a clear link between management and the severity of Armillaria-caused disease.

Morrison and Mallett (1996) observed that infection and mortality from the root disease Armillaria ostoyae was several times higher in forest stands with logging disturbance than in undisturbed stands, and that adjacent residual trees as well as new regeneration became infected when their roots came into contact with roots from infected stumps.

Precommercial thinning and soil disturbance led to an increased risk of infection and mortality by black-stain root disease (Leptographium wageneri) in Douglas-fir, with the majority of infection centers being close to roads and skid trails (Hansen et al. 1988). Also another Black-stain root disease (Verticicladiella wagenerii) occurred at a greater frequency in Douglas-fir trees close to roads than in trees located 25 m or more from roads (Hansen 1978). Witcosky et al. (1986) also noted that precommercially thinned stands attracted a greater number of black-stain root disease insect vectors.

Complex interactions involve mechanical damage from logging, infestation by root diseases, and attacks by insects. Aho et al. (1987) saw that mechanical wounding of grand fir and white fir by logging equipment activated dormant decay fungi, including the Indian paint fungus (Echinodontium tinctorium).

Trees stressed by logging, and therefore more susceptible to root diseases are, in turn, more susceptible to attack by insects. Goheen and Hansen (1993) reviewed the association between pathogenic fungi and bark beetles in coniferous forests, noting that root disease fungi predispose some conifer species to bark beetle attack and/or help maintain endemic populations of bark beetles.

Goheen and Hansen (1993) observed that live trees infected with Laminated root rot (Phellinus weirii) have a greater likelihood of attack by Douglas-fir beetles (Dendroctonus pseudotsugae). Also, Douglas-fir trees weakened by Black-stain root disease (Leptographium wageneri var. pseudotsugae) are attacked and killed by a variety of bark beetle species, including the Douglas-fir bark beetle (D. pseudotsugae) and the Douglas-fir engraver (Scolytus unispinosis) (id.).

The root disease Leptographium wageneri var. ponderosum predisposes ponderosa pine to several bark beetle species, including the mountain pine beetle (D. ponderosae) and the western pine beetle (D. brevicomis) (Goheen and Hansen 1993).

A variety of root diseases, including black-stain, Armillaria, and brown cubical butt rot (Phaeolus schweinitzii), predispose lodgepole pine to attack by mountain pine beetles in the interior west. The diseases are also believed to provide stressed host trees that help maintain endemic populations of mountain pine beetle or trigger population increases at the start of an outbreak (Goheen and Hansen 1993).

Grand and white fir trees in interior mixed-conifer forests have been found to have a high likelihood of attack by the fir engraver (Scolytus ventralis) when they are infected by root diseases, such as laminated root rot, Armillaria, and annosus (Goheen and Hansen 1993).

More western pine beetles (Dendroctonus breviformis) and mountain pine beetles (D. ponderosae) were captured on trees infected by black-stain root disease (Ceratocystis wageneri) than on uninfected trees (Goheen et al. 1985). The two species of beetle were more frequently attracted to wounds on trees that were also diseased than to uninfected trees. They also noted that the red turpentine beetle (Dendroctonus valens) attacked trees at wounds, with attack rates seven-to-eight times higher on trees infected with black-stain root disease than uninfected trees. Spondylis upiformis attacked only wounded trees, not unwounded trees (Id.).

Jones and Grant (1996) describe the relationship of roads and clearcutting:
The addition of roads to clear-cutting in small basins produced a quite different hydrologic response than clear-cutting alone, leading to significant increases in all sizes of peak discharges in all seasons, and especially prolonged increases in peak discharges of winter events. These results support the hypothesis that roads interact positively with clear-cutting to modify water flow paths and speed the delivery of water to channels during storm events, producing much greater changes in peak discharges than either clear-cutting or roads alone. Roads alone appear to advance the time of peak discharges and increase them slightly. Road surfaces, cutbanks, and ditches, and culverts all can convert subsurface flow paths to surface flow paths (Harret al., 1975; King and Tennyson, 1984; Wemple, 1994; Wright et al., 1990). Reid (1991) and Reid

and Dunne (1984) estimated discharges from culvert outfalls in western Washington and associated them with runoff from road surfaces.

Watersheds/Fisheries

We request a careful analysis of the impacts to fisheries and water quality, including considerations of sedimentation, increases in peak flow, channel stability, risk of rain-on-snow events, and increases in stream water temperature. Please disclose the locations of seeps, springs, bogs and other sensitive wet areas, and the effects on these areas of the project activities. Where livestock are permitted to graze, we ask that you assess the present condition and continue to monitor the impacts of grazing activities upon vegetation diversity, soil compaction, streambank stability and subsequent sedimentation.

The NEPA analysis should show whether or not your proposal would comply with the Clean Water Act and all state water quality laws and regulations. Categorically excluding actions that risk further pollution in Water Quality Limited Segments is not consistent with the Clean Water Act, NFMA, or NEPA. Please note that designating BMPs is not sufficient for compliance with CWA and NFMA.

Discuss the actual effectiveness of proposed BMPs in preventing sediment from reaching water courses in or near the analysis area. What BMP failures have been noted for past projects with similar landtypes? Also, please disclose which segments of which roads in the watersheds to be affected by this proposal will not meet BMPs following project activities.

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

The Fisheries BE/BA states that "Fish habitat and fish populations in the Rye Creek drainage would remain very near their existing condition during and following implementation of this proposal." Yet when describing the current condition of fisheries in the Rye Creek Watershed, the BE/BA and the Fisheries and Hydrology Specialist Reports include several findings that would seem to indicate that *current* fisheries conditions are not desirable. These finding include:

- "The density and size of westslope cutthroat trout in all the streams may be reduced relative to historic levels."
- "Historically, bull trout most likely migrated up Rye Creek to spawn, but no migratory fish have been observed in the last several years…. Since the fires and floods temperature have been documented to have increased 2-4 degrees C and fine sediments are also most abundant in the stream. These changes limit the ability for bull trout to persist in Rye Creek." No real analysis of the contribution of past logging to this increased sedimentation and temperatures exists. For instance, has

deforestation along substantial portions of creeks in the Rye Creek Watershed increased solar radiation and thus water temperatures?

- “The overall viability of westslope cutthroat trout in the Bitterroot River basin is considered to be ‘depressed’.”
- “The viability of westslope cutthroat trout and bull trout populations on the Forest is difficult to accurately assess.”
- “The density and size of these fishes [westslope cutthroat trout] may be reduced relative to historic levels.”
- “The ratings…suggest that water quality in the Rye Creek watershed was not meeting the Forest Plan desired condition before the 2000 fires. This is likely due to the granitic geology and the influence of public and private land management.”
- “North Fork Rye and Rye Creeks are on MTDEQ 303d lists.” Impairments include: aquatic life support, cold water fishery trout, and primary contact recreation (for Rye Creek only). Among the listed causes is past logging.

Most of this information indicates that fisheries are not healthy within the Rye Creek watershed in their current condition. The Harlan CE can, at best, have little negative impact on fisheries but will likely have some negative impact on fisheries already known to be “depressed” from the cumulative effects of past occurrences. Any project, such as the Harlan CE, that will not lead to the restoration and remediation of fisheries and watersheds in the Rye Creek watershed should not be allowed, particularly if there is the potential for any negative impacts to occur as a result of the project, as there is in the Harlan CE.

It seems that the finding of no significant impact to hydrology in the specialist reports depends primarily on a single statement: “new or expanded nonpoint source activities affecting a listed water body may commence and continue provided these activities are conducted in accordance with reasonable land, soil, and water conservation practices.” We fail to see how BMPs alone can be considered *reasonable* conservation practices considering the current state of hydrology and fisheries within the Rye Creek watershed.

There is no explicit analysis or proposed solution to the problem that the North Fork Rye Creek Road poses to water quality and fisheries since it parallels the road so closely for several miles. This is the proposed haul route and even with BMPs and mitigation measures this road has, continues, and will continue to contribute to the further degradation of fisheries and water quality in the N. Fork Rye Creek and Rye Creek itself. Furthermore, the N. Fork Rye Creek road has not been up to BMP standards for quite some time now despite the log hauling that took place on it after the fires of 2000 and the settlement agreement which mandated that these basic measures be taken.

Although it is mentioned that floodplains and wetlands are present in the area, the hydrologist specialist report fails to outline exactly why the proposed action would have no significant impact to these sensitive areas.

Cumulative Impacts

Cumulative impacts analysis does not seem to take into account other CE projects proposed near the Harlan CE project.

The analysis also does not mention the damage inflicted on floodplains and wetlands outside of the project area due to the cumulative effects of past harvest activity. This information can help to determine the rarity of these features in a heavily degraded drainage such as the Rye Creek watershed and the appropriateness of the proposed action (i.e., the degree of the impact to this “extraordinary circumstance”).

Although the specialist reports included some analysis of cumulative impacts to specific resources, conditions, and species groups there was no section devoted specifically to the analysis of cumulative impacts. Partly as a result of this, the cumulative impacts analyses are insufficient. They do not clearly outline the resource and species conditions prior to human intervention and management, they do not qualitatively or quantitatively describe how those conditions have been changed as a result of human intervention and management, and they do not clearly draw a line between these human caused changes and their repercussions for species viability and resource concerns. This must be done for the cumulative impacts analysis to be valid.

Considering the data presented in the specialist reports, and that which should have been included but wasn’t, it is unclear how the determinations that no significant impacts to species’ viability or other resource concerns could be drawn. The Rye Creek watershed is one of the most heavily impacted watersheds in the area. The response to this statement given to us on the field trip, and it seems as well in the NEPA documents, is that the watershed and its species have already been so degraded by past activities that the Harlan CE, with BMPs, mitigation measures, and its limited size, will not significantly contribute to any further degradation of the watershed. If the landscape is already as degraded as it looks and as it seems to be reported in the NEPA documents, then no further activities should be allowed within the Rye Creek watershed until these conditions are ameliorated.

Miscellaneous

We request the FS adopt the Restoration Principles (DellaSala, et al., 2003) as a screen for proposed actions such as this one. We incorporate them by reference, into this scoping response letter.

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

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

Thank you for your attention to these concerns.

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