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Comments: BNF Programmatic Amendment Draft Environmental Assessment comments relating to climate change.

1. General. There is no question that the existing Bitterroot National Forest Plan (U.S. Department of Agriculture 1987c) needs updating. Such an updating would also clearly require a full forest plan revision process. At the very least forest wide changes as in this Programmatic Assessment require a full Environmental Impact Statement, including a survey of the full range of the most recent research in environmental science, current local environmental data and expectations.

The Draft Environmental Assessment for this Programmatic Amendment claims the Amendment will have no "significant impact" and therefore does not require an EIS. Were the directions in the Amendment for a particular project, this might be the case. But, this amendment clearly states it is intended for forest wide application, to be applied to a wide diversity of habitats. It will cover all present and future forest project objectives and its very general language and lack of specific criteria will largely preclude effective public input on such projects. Most of the implied outcome assessments are termed "likely" and the directions of the document are given only as "guidelines." The Amendment introduction states, "This is a programmatic document, decisions on new projects that implement the Forest Plan will have site-specific analyses and tier to the Forest Plan and its amendments." In effect this means that USFS administrators will direct analysis, but their conclusions will not generally be subject to effective critique.

Amending the BNF Plan in this way limits the grounds for effective future public discussion or comment on forest projects. It establishes lesser standards than the existing Forest Plan and largely mandates only guidelines, giving our community no grounds to challenge the agency's choices for our own good in a county where the agency manages over 50% of the land. While there is much solid research and analysis in this Draft Environmental Assessment, it is not adequate in scope to decide the impact, or lack thereof, the Amendment would have on the evolution of the BNF, likely for decades as this EA admits, the much needed revision of the BNF plan has not yet been initiated and could be a years' long process.

Because of the above, the agency Draft EA conclusion of "no significant impact" and therefore no need for an EIS is not acceptable. In the context of present and expected climate change, concern about the objectives identified in this Amendment for Old Growth, Snags, Coarse Woody Debris, Carbon Storage and Sequestration, Fire and Fuels, and Soils requires a full EIS for this Programmatic Amendment to the BNF 1987 Forest Plan to be properly evaluated before it is approved.

2. Carbon storage/sequestration, old growth, coarse woody debris and soils. The inclusion of the topic of carbon sequestration in the context of climate change is an important step forward as it is not mentioned in the existing Forest Plan. There is widespread scientific agreement that carbon storage in mature forest systems is now, and will be for the foreseeable future, essential for the capture/storage of "greenhouse gasses" (GHG) to mitigate climate change.

This carbon sequestration occurs in woody debris, in soils (particularly in uncompacted/undisturbed soils bearing interactive networks of native fungal and plant communities) and in tree structures (specifically "mature" trees which take in CO₂ rather than younger trees which emit CO₂). Because the Amendment Draft EA generally considers these elements separately, the vital synergistic aspects among them that promote carbon storage are largely unacknowledged and undervalued.

In the Draft EA "old growth" forests are primarily defined not as systems but by the number of standing mature (not clearly defined term) trees. This allows significant interventions under the Amendment's chosen revised description (Green et al.) for "old growth" that will leave fewer standing trees per acre than required under the existing forest plan. The Draft EA admits that this may cause a near term loss of carbon storage on the forest, but claims that regeneration will eventually balance this out. There is no mention of the increasing failure of local tree regeneration, natural or by planting projects, because of outright mortality or slower maturation due to changing climate patterns. Also unmentioned is the fact that the half century it will take for new trees to mature to the carbon storage stage will be of little help for our current climate carbon storage needs.

The Programmatic Amendment's new "old growth" density definition will, as claimed, indeed increase the number of acres on the forest called "old growth," but these acres can be "old growth" in name only after treatment to new management standards. In addition to requiring fewer standing trees, specific requirements for amount and size of moisture retaining and soil building coarse woody debris coverage in the existing Forest Plan are largely replaced in the Amendment by discretionary "guidelines." It is suggested that treatment-thinning out "old growth" stands will improve their health and vigor and this may eventually compensate for the "short term" removal of carbon storage from the forest. It is also suggested that wood products will store carbon equal to that lost from the forest. There is significant current research that makes both these suggestions very questionable. This range of research is not addressed in the Draft Environmental Assessment. There is now clear research showing that the release of carbon through extraction and processing of timber outweighs what is stored in wood products resulting in a net loss of carbon storage. There is no recognition given to how the treatments for "improving" old growth stands will impact the soils therein, reducing their carbon storage capacity for many years.

The Draft EA (p. 77) asserts, "using the old growth definitions in Green et al. for the Forest rather than the existing Plan old growth criteria would not result in negative direct or indirect effects to old growth or to wildlife species associated with mature or over-mature forest structure." Not mentioned is that loopholes provided in the new wording (FW-GDL-VEG-01 and FW-GDL-VEG-02) allow for almost any management action. The described management goals are practically an invitation to violate the administrative requirement for Forest plan amendments to "guarantee the amendment will not initiate or cause the degradation of ecological sustainability within the plan area. (i.e., shrink wildlife habitat, lower water quality, reduce air quality, diminish soil productivity, decrease connectivity, downgrade ecosystem ability to contend with climate change, cope with disturbance regimes, etc.)" (§ 219.8)

The proposed Amendment offers almost no quantifiable "guarantees," or standards by which to measure "degradation." The suggested new normative standard for old growth from Green et al. is a perversion of what Green et al. clearly gives as a minimum definition for what could constitute old growth. On page 87, the Draft EA offers a fine list of, "The following management strategies are available under both alternatives and influence carbon uptake and storage potential (p87)," but nothing is guaranteed. It is only claimed that "The proposed action will not result in the loss of forest land on the Bitterroot National Forest; rather, more forest stands and old growth are likely to be retained, contributing to long-term carbon uptake and storage."

Most crucially, the next paragraph in the Draft EA reads: "In the absence of treatment, the forests where this proposed action would take place will thin naturally from mortality-inducing natural disturbances and other processes resulting in dead trees that will decay over time, emitting carbon to the atmosphere." No mention is made of how this process contributes to improved soil carbon storage and moisture retention that contribute positively to carbon storage through regeneration and nutrition for standing trees.

The paragraph continues, "Where treatments designed to reduce stand density and fuel loads do not occur, the fire-adapted forest where the proposed treatments would take place may be more at risk to large and higher-severity wildfires (Agee and Skinner 2005, Stephens et al. 2013), resulting in decreased ecosystem services and potentially increased carbon emissions." Note the "may be." Major current research data, not acknowledged here, opens to question this traditional assumption about the value of reducing stand density and fuel loads for

either forest health or reduced fire risk. This recent research suggests that the increase in moisture with more CWD, especially larger diameter logs, serves to slow fire spread and reduce fire risk, while leaving an area undisturbed, or only lightly disturbed by management practices, promotes forest health. Current research is also suggesting research that denser stands acting as windbreaks reduce the speed of fire spread. These research conclusions are of the first importance in a time when increased aridity and extreme weather/wind events are fueling higher wildfire risks, especially to western USA communities. The Draft EA fails to consider this research and may thereby increase wildfire risks for the Bitterroot Valley.

Finally, the Draft EA states, "Furthermore, it is difficult and highly uncertain to ascertain the indirect effects of emission from multiple, generally small projects that make up these alternatives on global climate. Management actions are directed at a very small percentage of the total forest land on the Bitterroot National Forest; even in the near-term, these alternatives would have minimal direct effects on carbon emissions and carbon stocks relative to total carbon stocks in the Bitterroot NF. Because the potential direct and indirect effects of alternatives would be negligible, the contribution of the plan's proposed actions to cumulative effects on global atmospheric GHG concentrations and climate change would also be negligible."

The assertion that the Programmatic Amendment effects on GHG will be negligible and therefore need not be considered indicate a clear failure to recognize the nature of current climate change which makes no mitigation of GHG negligible. It also, in this regard, violates recent USFS administrative directives, "Climate change results from the incremental addition of GHG emissions from millions of individual sources, which collectively have a large impact on a global scale. CEQ recognizes that the totality of climate change impacts is not attributable to any single action, but is exacerbated by a series of actions including actions taken pursuant to decisions of the Federal Government. Therefore, a statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA. Moreover, these comparisons are also not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change challenge itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact." (Fed Reg. 10252 (Feb. 19, 2021) - <https://www.govinfo.gov/content/pkg/FR-2021-02-19/pdf/2021-03355.pdf>)

First issued on August 1, 2016, this directive from Executive Office of the President, Council on Environmental Quality has been reimplemented as a national directive. [Fed Reg. 10252 (Feb. 19, 2021).] . The 2016 CEQ guidance acknowledges, "changes in our climate caused by elevated concentrations of greenhouse gasses in the atmosphere are reasonably anticipated to endanger the public health and public welfare of current and future generations." It directs federal agencies to consider the extent to which proposals would contribute to climate change. It rejects as inappropriate any notion that any proposal is of too small a scale for such consideration. The 2016 CEQ guidance acknowledges, "changes in our climate caused by elevated concentrations of greenhouse gasses in the atmosphere are reasonably anticipated to endanger the public health and public welfare of current and future generations." It directs federal agencies to consider the extent to which proposals would contribute to climate change. It rejects as inappropriate any notion that any proposal is of too small a scale for such consideration.

Thus, the FS must quantify GHG emissions. The agency can only use a qualitative method if tools, methodologies, or data inputs are not reasonably available, and if that is the case, there needs to be rationale as to why a quantitative analysis is not warranted. Quantitative tools are available (e.g. Greenhouse Gas (GHG) Accounting Tools - <https://ceq.doe.gov/guidance/ghg-accounting-tools.html>) so the BNF must use them to be in compliance with the national directive. The USFS must quantify GHG emissions but the Draft EA does not even attempt to do so.

The above makes it clear that this Programmatic Amendment and Draft Environmental Assessment fail to adequately evaluate or address, as required, the climate impacts of its Old Growth, Coarse Woody Debris and Soils revisions to the Bitterroot National Forest Plan, or how these revisions may affect wildfire risk. The proposed Amendment diminishes protection for old-growth stands, and introduces loopholes that will allow increased harvesting of old-growth and mature trees. This obviously is a significant impact of the Amendment in terms of carbon sequestration and climate change expectations. The Amendment's admitted lack of inventory data on existing old growth on the forest potentially allows cumulative impacts that are not delineated, much less given prescribed limits, as would be scientifically appropriate in the context of expected climate change impacts. The Draft Environmental Assessment, with its false claims of "no significant impact," does not justify implementation of the proposed Amendment to the Bitterroot National Forest Plan.