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Organization:

Title:

Comments: Hello,

Thank you for the extensive work that went into producing the array of documents you made available on your websites. Unfortunately, My MAC security protections made it impossible to access many of your documents - - especially to save and reopen them !!! PLEASE MAKE A MORE EFFECTIVE EFFORT TO PROVIDE UNIVERSAL ACCESS TO YOUR LIKELY FINE WORK, ESPECIALLY FOR THOSE OF US WHO USE MAC COMPUTERS.

Please note, I can be contacted at my email address: steent@igc.org

Unfortunately, the difficulties in accessing your documents, except for brief looks at web available versions have made it difficult to make more specific comments to your work.

Please note, I have submitted a substantial comment during your scoping process. Note also, the following is based on my extensive experience observing forest management in the Pacific Northwest and to a lesser extent observing forests in the rocky mountains and the midwest. I have taught forest ecology and related sustainability courses at a University level for over 50 years.

IMPORTANT ADDITION TO MY SCOPING COMMENTS:

In the documents I have been able to access, I do not detect adequately defined processes for the protection of MATURE FOREST ECOSYSTEMS. I do not detect clear language and processes for protection of these essential precursors for Old-growth ecosystems. MATURE FORESTS NEED POSITIVE IMPROVEMENTS IN THEIR PROTECTIONS, SO THAT A SOURCE FOR OLD-GROWTH ECOSYSTEMS CAN BE SUSTAINED.

NOTE ALSO, I REMAIN CONCERNED IN RELATION TO THE LOGGING BIAS OF THE USFS. I ESPECIALLY URGE THE ELIMINATION OF THE PERVERSE INCENTIVES OF ASQ AND RELATED TARGETS FOR TIMBER PRODUCTION.

AS YOU PROCEED WITH A FINAL EIS, please recognize the huge benefits of intact natural forest ecosystems and provide appropriate protections for their continued functional benefits for the future citizens of this country.

To be sure you have taken my scoping comments into consideration,

I hereby submit their essential features again - - -

1) I submit the following in relation to the EIS and forest plan amendments that will be formulated in support of President Biden's executive order #14072 which states, mature and old-growth forests have a vital need for protection - - "Strengthening America's forests, which are home to cherished expanses of mature and old-growth forests on Federal lands, is critical to the health, prosperity, and resilience of our communities-particularly in light of the threat of catastrophic wildfires. . ."

As the above activities are undertaken, the administrative actions and on the ground activities that are done need to be done with great care to ENSURE THAT ALL MATURE AND OLD-GROWTH FOREST STANDS ARE PROTECTED.

2) In the Pacific Northwest, the original Northwest Forest Plan, began significant protection of old-growth forests in its "reserves". At this time, all older forest protections need to be substantially improved by placing all old-growth and mature (over 80 years) forested areas previously designated as matrix into old-growth reserves.

2A) See the book "The Making of the Northwest Forest Plan" written by key contributors to the Northwest Forest Plan: Chapter 12 of that book "A Path Forward" contains much wise input that should be carefully followed, and from which I will limit my quotes to the following:

"We understand the importance of mature forests much better today than when the NWFP was developed in 1994."

"It is time to cease logging of older, unmanaged Moist Forests on national forests - both mature and old growth. . . . These unharvested older forests are too valuable ecologically, socially, and spiritually to allow for their

elimination through logging. . . . logging older tree remnants in younger stands undergoing harvest should cease." (K. Norman Johnson, Jerry F. Franklin, and Gordon H. Reeves)

2B) For the westside forests of the Pacific Northwest, protecting ALL old-growth and mature forested areas would bring significant benefits for CARBON SEQUESTRATION and STORAGE. It will be important to include mature trees over 80 years old in these protections, because that is the point where carbon sequestration becomes more effective. These changes are needed because of more recent advancements of scientific knowledge in relation to the processes available for carbon removal from the atmosphere. This change becomes especially imperative because of the current and increasing impacts of climate change which are already resulting in significant numbers of deaths. Given the difficulty of completely eliminating future fossil fuel use, the role of forests to sequester and store that additional carbon dioxide will be truly essential.

2C) Maximizing old-growth and mature forest protections will also play a vitally important role in addressing the current biodiversity crisis, especially for terrestrial environments.

2D) Protections of mature and old-growth forested areas will also facilitate improvements of watershed characteristics, such that the impacts of climate change can be minimized. This involves the ability of forested watersheds to retain greater snowpacks as well as to absorb and store water for more uniform release throughout the calendar year. This will also help mitigate the reduced snowpacks that will be the result of climate change, something of great significance for western coastal states and the rocky mountain states. This will also become more significant with the more intense rainfall events and longer dry periods that are a consequence of climate change. Improved watershed characteristics will be vitally important both for urban water supplies and for essential irrigation water needed by agriculture.

2E) Maximizing old-growth and mature forest protections, especially in RIPARIAN AREAS, will also play a vitally important role in supporting recovery of aquatic ecosystems. This will be indispensable in relation to supporting recovery of salmon populations in the western US. Given the elevated temperatures predicted for climate change, riparian area shading of all levels of streams in all watersheds will be essential, even if those areas of forest are not old enough to be mature or old-growth.

2F) Establishment of the proposed Douglas-Fir National Monument here in the Western Cascades of Oregon would also be a valuable step toward additional mature and old-growth protection. It would also involve protecting an important array of successional stages of forest ecosystems, in addition to just mature and old-growth forests.

2G) Remember also that due to mill conversions to handle the small logs being produced in managed forests of the PNW, there are almost no mills left to handle the large logs that come from mature and old-growth trees. Therefore the above important protective actions will have minimal impacts on the flow of logs from national forests, while they will have the substantial benefits detailed above - especially for carbon sequestration and storage as well as biodiversity protection.

I trust that managers do not need to be reminded that older and mature forests need to be protected in order to be assured of a continued source for appropriately substantial areas of old-growth forest - this is essential in order to make up for losses of old-growth that occur because of disturbance such as wind and fire.

3) Rigorous Old-growth protections and management also need to be extended to the dry east-side forests of the Pacific Northwest as well as the forests of the intermountain west. Protection of mature and especially old-growth "east-side" forests has historically been accomplished by meeting the criteria set forth in the excellent report by the "Eastside Forests Scientific Society Panel" published in 1993. Unfortunately, those principles have been reversed in recent years. Those principles need to be carefully refined and essentially reinstated. I repeat those key Study Panel principles in the following subsections: (Please note the extended explanations in that report could also be appropriately added to the following text and applied.)

Note, at the present time, the old-growth forests of the east-side (of Washington, Oregon, and California) have been especially impacted by logging. The small amounts of those old-growth forests that are left are worthy of special levels of protection and active management - by thinning the understory to appropriately reduce the risk of catastrophic wildfire (while leaving the over-story old-growth forest fully intact). Understory thinning must not become a rationalization for logging old-growth trees to pay for that required restoration work. This kind of effort is essential for restoration of these forests to their historic fire resistant state which was the result of the influence of fire frequencies of less than 20 years. Given the extensive areas that require restoration, this work will need to be strategically distributed across the landscape until it can be completed. Please remember this understory thinning is an ethical obligation that has become necessary because of the historic fire suppression actions done in the management of these forests.

"Eastside Forests Scientific Society Panel" report published in 1993

presented principles that follow in the next list:

3A) "Do not log late-successional/old-growth forests in eastern Oregon and Washington."

3B) "Cut no trees of any species older than 150 years or with a diameter at breast height (DBH) of 20 inches or greater."

3C) "Do not log or build new roads in aquatic diversity management areas (ADMAs)."

3D) "Do not construct new roads or log within current (1) roadless regions larger than 1000 acres or (2) roadless regions that are biologically significant but smaller than 1000 acres."

3E) "Establish protected corridors along streams, rivers, lakes, and wetlands. Restrict timber harvest, road construction, grazing, and cutting of fuelwood within these corridors."

3F) "Prohibit logging of dominant or co-dominant ponderosa pine from Eastside forests."

3G) "Prohibit timber harvest in areas prone to landslides or erosion unless it can be conclusively demonstrated by peer-reviewed scientific study that no associated soil degradation or sediment input to streams results from that harvest."

3H) "Prevent livestock grazing in riparian areas except under strictly defined conditions that protect those riparian areas from degradation."

3I) "Do not log on fragile soils until it is conclusively demonstrated by peer-reviewed scientific study that soil integrity is protected and that forest regeneration after logging is assured."

3J) "Establish a panel with the appropriate disciplinary breadth to develop long-term management guidelines that will protect Eastside forests from drought, fire, insects, and pathogens." (as well as FIRE)

3K) "Establish a second panel, to produce a coordinated strategy for restoring the regional landscape and its component ecosystems. Emphasize protecting the health and integrity of regional biotic elements as well as the processes on which they depend."

4) The above east-side related concepts can be applied in principle to the moist westside forests of the NWFP, the forests of the Rocky Mountains, as well as the forests east of the 100th meridian in relation to President Biden's general goal of supporting the protection of mature and old-growth forests nationwide.

5) Note, although the contiguous areas available for protection under President Biden's Executive Order #14072 are not as obvious in the forests as one travels east of the 100th meridian, it will be extremely essential to identify mature forested areas that can be protected so they can have the opportunity to develop the full range of old-growth characteristics and thereby achieve their potential for support of their original biodiversity, carbon sequestration potential, and watershed protection capability.

6) Finally, I remind the reader of an excellent section of President Biden's Executive Order #14072: "Sec. 4 . Deploying Nature-Based Solutions to Tackle Climate Change and Enhance Resilience. Just as forest conservation, restoration, and adaptation generate broad benefits related to climate change and other areas, other nature-based solutions can advance multiple benefits. These solutions include actions that protect coasts and critical marine ecosystems, reduce flooding, moderate extreme heat, replenish groundwater sources, capture and store carbon dioxide, conserve biodiversity, and improve the productivity of agricultural and forest lands to produce food and fiber. To ensure that agencies pursue nature-based solutions, to the extent consistent with applicable law and supported by science, the following actions shall be taken: - - - "

7) In summary and to be completely clear, there needs to be no exception that permits logging, commercial exchange, transfer of ownership, or financial incentive to log mature and old-growth trees on National Forests. There can be no exception that allows for logging that would undermine the climate, biodiversity protections, and watershed protections that would result from full protection of ALL mature and old-growth forest stands on this nation's National Forests.

8) Thank you for your attention to the above vitally important reasons for increased protections for mature and old-growth forested ecosystems. Clearly, substantial actions need to be accomplished as quickly as possible, so no further loss of mature and old-growth forested areas occurs.

Thank you for taking full consideration of the above,

Trygve Steen, Ph.D.

Professor of Environmental Science and Management (retired)