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Comments: Please accept the comments in the attached as representing those of the Gallatin Wildlife Association of Bozeman, Montana. We request that these be made part of the official record.

Thank you.

August 5, 2022

Re: Request for Information: Federal Old-Growth and Mature Forests

Document ID: FS_FRDOC_0001-3708

Federal Register Number 2022-15185

Reviewing Officials of the Offices of:

Dept. of Agriculture, Dept. of Interior

Dear Reviewing Officials:

This past July 14, 2022, the United States Department of Agriculture (USDA), United States Forest Service (USFS), Department of Interior (DOI), and the Bureau of Land Management (BLM) issued a request for information (RFI) through the Federal Register. The purpose of the RFI is to define mature and old growth forests. This action is a result of Executive Order (EO) 14072 released on April 22, 2022; the title being "Strengthening the Nation's Forests, Communities, and Local Economies". This EO requires USDA and DOI to establish those definitions, complete an inventory, make that publicly available, identify threats to those forests and much more in order to meet goals of the future.

Comments provided are by the Gallatin Wildlife Association located in Bozeman, Montana. The Gallatin Wildlife Association (GWA) is a local, all volunteer wildlife conservation organization dedicated to the preservation and restoration of wildlife, fisheries, habitat and migration corridors in Southwest Montana and the Greater Yellowstone Ecosystem, using science-based decision making. We are a nonprofit 501 (c) (3) organization founded in 1976. GWA recognizes the intense pressures on our wildlife from habitat loss and climate change, and we advocate for science-based management of public lands for diverse public values, including but not limited to hunting and angling.

The first concept in developing a framework definition for mature and old growth forest is to include function and purpose. Not to be taken for granted, yet it seems these basic principles are easily overlooked in today's forest management practices, especially as corresponding proposals take center stage. Biodiversity or ecological diversity is a common refrain used by environmentalist touting the advantages of mature and old-growth forests, and rightfully so. The relationship between wildlife and our Nation's forests is self-evident and apparent. We shall forgo that discussion and simply say that the survivability of our wildlife is paramount and inseparable, all dependent upon the existence of our Nation's Forest. Many species of wildlife have adapted themselves to exist specifically in those conditions, that particular niche.

Mature and old growth forests provide a complexity and a fragile connectivity to all living things. In an article found on the webpage of Unity College¹ dated September 28, 2017, an article entitled "The Benefits of

Protecting Old-Growth Forests After your Sustainability Studies" acknowledges the role that mature and old-growth forests play in an ecological system.

"These include functions like protecting nearby water systems, encouraging the formation of healthy soil, and breaking down ambient air pollution.

Untouched old-growth forests exhibit a number of important properties that younger, disturbed forests may not. An old-growth forest may have more fallen and decaying trees, for example, as well as trees with more established root structures and a higher average height. All of these help shape the local environment, providing a greater variety of habitats, greater access to some important nutrients, greater soil drainage and aeration, and other benefits. These can, in turn, promote the survival of a wider range of organisms in the area."

This reality is a building block of biodiversity, yet it seldom earns a talking point in project development discussions. And it is seldom brought to the public's attention, unless a conservation group makes it so. These untouched forests are the building block of biodiversity as stated above upon which all other natural processes flow. When man intervenes and interrupts that natural pathway, then that action leaves our natural world and our society with incommensurable benefits.

Another function and purpose of mature and old-growth forests is the relationship, the balance they play in our atmosphere. Forests simply make our world sustainable by the regulation of gases. It is another role that provides function and purpose to our existence.

In that regard, the Intergovernmental Panel on Climate Change² issued a report entitled "Five Reasons The Earth's Climate Depends On Forests" signed by 40 world-wide signatories, scientists in the field of climate science.

- 1.) The world's forests contain more carbon than exploitable oil, gas, and coal deposits, hence avoiding forest carbon emissions is just as urgent as halting fossil fuel use.
- 2.) Forests currently remove around a quarter of the CO₂ humans add to the atmosphere, keeping climate change from getting even worse.
- 3.) Achieving the 1.5[deg]C goal also requires massive forest restoration to remove excess carbon dioxide from the atmosphere.
- 4.) Bioenergy is not the primary solution. Achieving significant amounts of carbon dioxide removal through use of wood for energy and capturing the resulting carbon in geological reservoirs requires technology that is untested at large scale.
- 5.) Tropical forests cool the air around them and the entire planet, as well as creating the rainfall essential for growing food in their regions and beyond.

These five reasons highlight the first contextual importance of defining mature and old growth forests. The dependency of our climate upon forests provides function and purpose that is unequalled. These are the forests that are the anchor in mitigating climate change. More on this later, but science indicates that taller and older trees are more beneficial in storing carbon.

In two bullet points from the article in Mongabay online magazine³ dated May 23, 2019 entitled "Tall and old or dense and young: Which kind of forest is better for the climate?", we have these two statements to analyze.

1. A closer look, however, reconciles these two viewpoints. While young forests tend to absorb more carbon

overall because trees can be crowded together when they're small, a tree's carbon absorption rate accelerates as it ages. This means that forests comprised of tall, old trees - like the temperate rainforests of North America's Pacific coast - are some of the planet's biggest carbon storehouses.

1. But when forests are logged, their immense stores of carbon are quickly released. A study found the logging of forests in the U.S. state of Oregon emitted 33 million tons of CO₂ - almost as much as the world's dirtiest coal plant.

In order to achieve the purpose of protecting these climate-critical forests from logging, many scientists today define 'mature/old growth forests' as trees 80 years old. It is around this time table that trees become biologically mature, with few exceptions of the species. They become efficient in maximization of benefits such as carbon sequestration. GWA believes this age requirement would protect most of the climate and carbon-critical forests of today. Science has shown forests with this chronological age may contain the bulk of carbon stored and will continue to do so at high rates into the future.

All forests may be similar in function yet look completely different in appearance based upon dominant tree species, geography, soil conditions, climate, and so many other factors. That is a given. And that complexity and nonconformity is most likely one reason why there has not been a universal or agreed upon definition of mature and old growth forest. Government, conservationists, timber industry officials or society as a whole have relied on definitions that suit them, but they have not been universally excepted. But now the Biden Administration has created this need in order to fulfill the goals of EO 14072. The administration seems to recognize the fact that the definition should not be strictly age dependent.

Our study has historically shown that during the 1970s, scientists determined old growth to be trees generally 150 years old at the time. But study and common sense also tells us much as changed over these last 50 years. Continued logging, wildfire, pests' infestation and climate change has taken its toll on the natural landscape. Very few landscapes have been untouched by man whether it be directly or indirectly, making the traditional thinking of mature and old growth forests in need of an altered definition. Today, consideration of a forest's ability to sequester carbon should be and must be taken into account as the storage potential of older and larger trees needs to be appreciated in an era of global warming.

Speaking in those terms, we found this in a published article by Pacific Northwest Research Station⁴, Issue 4, published in June 2003 by USDA.

"Today's old-growth forests developed along multiple pathways with many low-severity and some high-severity disturbances along the way. And, scientists are learning, the journey matters[mdash]old-growth ecosystems contribute to ecological diversity through every stage of forest development. Heterogeneity in the pathways to old-growth forests accounts for many of the differences among old-growth forests."

All living things are on a journey. Our forests are no different. A pathway in which a forest develops can and does matter. What has been the history upon the landscape in terms of fire, logging, disease, etc may foretell the forest's ability to withstand similar events of the future. That is a valuable asset. Depending upon its pathway of existence, a forest's value could be greatly enhanced to the ecological community at large.

One concept which needs to be incorporated in the definition of mature and old growth forests is that of complexity. Complexity and connectivity definitely hold true in the realm of mature and old growth forests.

In speaking of complexity, forests are highly variable, not homogeneous. They differ in tree size, species, canopy structure, ability to sequester carbon, and biodiversity potential.

They are more or less the institutions of the natural world filled with wisdom and the genetic material to be

survivalist in a changing world (if man allows them to function in that capacity). In that complexity, we must also include forests that are in multi-stages of development. Referencing the same article above, scientists now say that mature and old growth forests is a mixing zone of young, mature and old growth, even a combination of dead and live trees.

Within the Federal Register's request for information, it specifically requests information and comments on the following 5 questions.

- * What criteria are needed for a universal definition framework that motivates mature and old-growth forest conservation and can be used for planning and adaptive management?
- * What are the overarching old-growth and mature forest characteristics that belong in a definition framework?
- * How can a definition reflect changes based on disturbance and variation in forest type/composition, climate, site productivity and geographic region?
- * How can a definition be durable but also accommodate and reflect changes in climate and forest composition?
- * What, if any, forest characteristics should a definition exclude?

We view the first two questions to be similar in nature and we have touched upon those characteristics within this discussion. The criteria for a universal framework of mature and old growth forests should be based upon more than just age or even size of individual trees. Complexity, diversity and structure of the forest should be part of that definition. We've stated that an age of 80 years for mature forests should suffice to include the ability of mature trees to be efficient in the capture and storage of carbon. Age requirements of mature and old growth forests of varying species would differ if we were to simply base criteria on age alone. But we realize true mature and old growth forests have varying and complex systems in place such as height and width of tree canopies, branching systems and the ability to provide niches for wildlife.

Question 3 stated in the Federal Register asks how can a definition reflect changes based on disturbance and variation in a forest? Answer - the definition needs to be versatile, not rigid, recognizing those attributes may appear in a variety of types of forests. Individual trees that have survived natural disturbances upon the landscape could have a value to the forests overall. Perhaps a genetic variability has allowed those trees to prevail through fire, disease or pests, perhaps even climate change. They could contain a wealth of genetic value in the forests of today, but also forests of the future. We must allow and recognize their role in mature and old growth forests.

Question 4 asks: How can a definition be durable but also accommodate and reflect changes in climate and forest composition? Again, as answered above, this question needs to be versatile, not rigid. We can get confused with this question if we're strictly trying to arrive at a simple definition, but we are under the impression as stated that we are trying to define or describe a definition framework. A framework should have flexibility and durability, yet contain the necessary parameters to encompass changes that may occur over time albeit from changes in climate or forest composition.

The final question asked in the Federal Register is: What, if any, forest characteristics should a definition exclude? We don't see the value of this question as for the purpose of the EO, it seems to be more important to be over encompassing of characteristics of what to include vs what to exclude. Focusing on factors to be included in this framework is a much more efficient and positive step.

In Conclusion:

The purpose of this request for information is to define something that has not been defined before. In lieu of the subject matter, not an easy task. We have discussed the complexity and the science behind the task of defining mature and old growth forests. Even though the acumen invites wisdom and scientific thought, we don't want to get lost in the effort; where we fail to see the forest for the trees.

The focus of this exercise is to develop a framework to fulfill the goals of EO 14072. According to the Climate-Forest Coalition, "President Biden's Earth Day Executive Order rightly recognized the critical role mature and old growth forests play as a climate solution, and the urgent need to confront the threats forests face." We agree with this premise, but the purpose of this exercise is to curb and mitigate the negative effects of climate change. This is a simple charge to comprehend, even though it may be more difficult to carry out in today's politically charged atmosphere.

We must understand the connection between climate and forests. GWA has long been proclaiming that the USFS needs to change their paradigm; incorporate carbon sequestration as their primary focus and limit the practice of logging. We contend the value of a live tree has more benefit to society over the life of that tree than a logged tree. It is either that or allow carbon sequestration to become a purpose, a part of the Multiple Use Concept. The ability of our forests to capture carbon is a simple concept, one that needs to be implemented. We just need to let trees grow. What an inexpensive concept to enforce.

We should not let the complexity of the task overwhelm our purpose. We can establish the definition, the framework from which to work, but the application needs to be simplified for the public's understanding and approval. Let's allow scientist, forest managers and those engaged in our natural resources develop the framework, but let society understand and support the framework and approve its implementation.

Phrases such as vegetation thinning, vegetation treatments and fuel reduction are nothing more than code words used by government agencies and others for the purpose of logging. By doing so, agencies and authorities undermine the problem and provide a false reality to the public. It sends the wrong message and does nothing to solve the problem before us. We need to move away from those actions and simply allow trees to fulfill their purpose, their destiny. Not every problem has a man-made solution despite man's arrogance in thinking he does.

In summarizing this effort, the definition framework must include concepts of:

- 1.) Function and purpose
 - a.) Biological diversity
 - b.) Efficiency in carbon sequestration
 - c.) Enhancement of watershed protections
- 2.) The biological maturity age of 80 years or older
- 3.) Incorporate the Complexity and Heterogeneity and view it as a positive
- 4.) Incorporate and understand that forest have a pathway or journey, a journey which include low and high intensity of life disturbances. Those are value in old-growth forests.
- 5.) Include a mixing zone of young, mature and old growth forests, including live and dead trees

We should not let the complex nature and the political haggling of defining mature and old growth forests hinder our ability and willingness to protect mature and old growth forests. In today's society, many are using wildfire as an excuse to cut, thin and log trees to prevent wildfire expansion. But by doing so we are undermining the solution to which we all want to achieve. We are literally treating the symptom rather than the problem. By cutting and removing trees from the ecosystem, we actually could be removing genetic material that could potentially aid in the resistance of wildfire, pests, even climate change.

If you notice above in item c under Function and Purpose, we included enhancement of watershed protection, a subject we've barely discussed. However, mature and old growth forests offer the best filtration and protection of our Nation's watersheds. We need to provide a large stability factor in watershed protection and maintaining our mature and old growth forest. This exemplifies the value that our mature and old growth forests never stop providing benefits to our society.

We as a people are too reactionary. In our exuberance to curb wildfires, we see fit to cut and log trees. By doing so, we ignore the science, but we also ignore the function and purpose of our forests. We need to stop instilling practices based upon our westward expansion mentality. It is 2022. We need to realize our forests have a greater purpose than to look pretty or provide timber to build a log cabin in the woods. We might want to think our forests may actually have a function, a purpose. It is only then when we can salvage our planet.

We want to thank the Biden Administration, the USFS, USDA, DOI and BLM for reaching out to the public for this request for information. GWA urgently and firmly request that these agencies and others would shift to a different paradigm, one of protection instead of extraction. Currently politicians are using a wrong ideology to be self-serving. We urge this administration to stay true to their word. We know what we have to do, the question really is, do we as a people have the political will to do it.

Sincerely,

Clinton Nagel, President

Gallatin Wildlife Association

References:

1. "The Benefits of Protecting Old-Growth Forests After your Sustainability Studies", Unity College, September 28, 2017. <https://unity.edu/sustainability/benefits-protecting-old-growth-forests-sustainability-studies/#:~:text=Old%2DGrowth%20Forests%20Often%20Have%20Incredible%20Biodiversity&text=These%20include%20functions%20like%20protecting,younger%2C%20disturbed%20forests%20may%20not>.

1. "Five Reasons The Earth's Climate Depends On Forests", Climate and Land Use Alliance, Intergovernmental Panel on Climate Change, <https://www.climateandlandusealliance.org/scientists-statement/>

1. Koberstein, Paul, Applegate, Jessica, "Tall and old or dense and young: Which kind of forest is better for the climate?", Mongabay online magazine, May 23, 2019. <https://news.mongabay.com/2019/05/tall-and-old-or-dense-and-young-which-kind-of-forest-is-better-for-the-climate/>

1. "New Findings About Old-Growth Forest", Pacific Northwest Research Station, U.S. Dept of Agriculture, U.S. Forest Service, Issue 4, June 2003. <https://www.fs.fed.us/pnw/pubs/science-update-4.pdf>