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Comments: Input provided per the attached comments letter.

Re: Sequoia ForestKeeper Input re "Request for information [RFI] on federal old growth and mature forests (Executive Order 14072) #NP-3239"Mr. French and Ms. Stone-Manning, Sequoia ForestKeeper (SFK) is pleased to provide input to help the agencies determine standards and definition, as well as protection for mature and old growth forests. SFK is a non-profit conservation organization dedicated to conserving forested ecosystems, secure habitats for fish, wildlife, and people, water quality, and mature and old growth forests on the Sequoia National Forest and Giant Sequoia National Monument, as well as adjacent lands managed by the BLM that contain giant sequoia groves and other forested ecosystems. The RFI's stated goal is to move President Biden's Executive Order (E.O.) 14072, which was issued on April 22, 2022, one step closer to implementation. E.O. 14072 "calls on the Secretaries of Agriculture and the Interior, within one year, to define, identify, and complete an inventory of old-growth and mature forests on Federal lands, accounting for regional and ecological variations, as appropriate, and making the inventory publicly available." We believe that the permanent protection of these older forests through rule-making (similar to the roadless rule) can help mitigate the loss of biological diversity from our publically-owned federal forest lands. Protection of these forest stands will help secure the massive carbon stocks held in the standing biomass and soils in these forests and also maximize carbon sequestration, since older trees sequester significantly more carbon than younger trees. It is therefore imperative that you act deliberately and expeditiously to save what remains of these older forests. Request for Interim Protection During Analysis and Rule-Making We urge the Forest Service and BLM to immediately place a moratorium on any logging in mature and old growth forest stands, which should be initially defined as stands containing trees 80 years and older. We would also urge that any exceptions should only allow the removal of very small diameter trees (6 inches dbh or smaller) immediately adjacent to forested communities or within 100 feet of structures, to provide defensible space. Interim and permanent policies to protect mature and old growth forests are supported by previous efforts to define and protect late-successional old growth in the Sierra Nevada Mountains of California. In preparation for Forest Plan revisions, Dr. Jerry Franklin and colleagues were asked to author a chapter of the Sierra Nevada Ecosystem Project (SNEP) Report about the conservation and restoration of old growth forest and associated ecosystems: The Working Group on Late-successional Conservation Strategies (Franklin et al. 1996) has identified and discussed issues associated with the development and evaluation of conservation strategies for late-successional forests in the Sierra Nevada. We rely heavily upon their conclusions as a basis for this discussion and refer the reader to their paper for more complete information. Some of the key elements of an LS/OG conservation strategy which they identify include: 1) retaining existing high-quality LS/OG forests; 2) providing for large, contiguous blocks of LS/OG forests; 3) spatially explicit planning; 4) designating reserves where maintenance of high-quality LS/OG forests is the primary objective; 5) restoring fire as an important component of management; and 6) restoring conditions in the matrix. Available information on LS/OG forest ecosystems, processes, and organisms is an important limitation in devising conservation strategies resulting in more conservative approaches than might be necessary with a larger information base. If maintenance of high-quality LS/OG forest ecosystems is adopted as a policy objective, the goals of that program need to be defined and management programs initiated which will: 1) maintain existing high-quality LS/OG forests; 2) restore such conditions where the existing LS/OG forests are insufficient to achieve objectives; 3) restore fire as an important process in maintaining and protecting LS/OG forest ecosystems; and 4) restore structural complexity in the matrix. If maintenance of high-quality LS/OG forests is adopted as policy on federal forestlands in the Sierra Nevada further timber harvest within existing high-quality LS/OG forest areas should be halted for at least an interim period of planning and assessment. [T]he current level of high-quality LS/OG forests is far below levels that existed in the presettlement landscape and as well as the natural range-of-variability. Hence, restoration of LS/OG conditions in structurally simplified stands is likely to be an important part of achieving desired amounts of LS/OG forests in some localities, particularly where levels are currently very low, such as in much of the Eastside Pine type Jerry F. Franklin and Jo Ann Fites-Kaufmann, Assessment of Late-

Successional Forests of the Sierra Nevada, Section III, Chapter 21, part 4, p. 652 - (full Section from SNEP available at https://pubs.usgs.gov/dds/dds-43/VOL_II/VII_C21.PDF (paste link into browser)). Sequoia ForestKeeper's Input to Help Define Mature and Old-Growth Forests Specifically, the agencies are seeking input on the development of a definition for old growth and mature forests on Federal land, based on the following questions:

1. 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? To restore equilibrium from the current situation, where the value of "timber" from mature and old forests predominate, the criterion must capture the entire range of traditional publicly shared values, but exclude production of "timber." In other words, and according to the 1989 Forest Service Chief's Position Statement on National Forest Old Growth Values, the criteria must emphasize "biological diversity, wildlife and fisheries habitat, recreation, aesthetics, soil productivity, water quality[hellip]." See Chief's Position Statement, PDF p. 1. "Where goals for providing old growth values are not compatible with timber harvesting, lands will be classified as unsuitable for timber production." Id. [O]ld growth is typically distinguished from younger growth by several of the following attributes:
 1. Large trees for species and site.
 2. Wide variation in tree sizes and spacing.
 3. Accumulations of large-size dead standing and fallen trees that are high relative to earlier stages.
 4. Decadence in the form of broken or deformed tops or bole and root decay.
 5. Multiple canopy layers
 6. Canopy gaps and understory patchiness.Id. at PDF p. 2. Mature forests were not discussed in the Chief's position statement, but the same values and attributes apply, but the criteria should be based either on age (80+ years), site productivity to assist with carbon sequestration (if younger), or the stands' ability to contribute to biological diversity, wildlife and fisheries habitat, recreation, aesthetics, soil productivity, water quality.
2. What are the overarching old growth and mature forest characteristics that belong in a definition framework? A simplified overarching characteristic could be based on the age of trees in a stand, and we suggest that any stands with 80-year old trees or older should be defined as mature and old growth forests. The important new component in this new framework is the need to define "mature" forests, since the Forest Service has already given much thought to defining "old growth" forests. In addition to listed attributes of "old growth" forests, and to his credit, the Forest Service Chief describes "old growth" to include areas that have seen disturbances, which can even include "human disturbances": Compositionally, old growth encompasses both older forests dominated by early seral species, such as fire-dependant species, and forests in later successional stages dominated by shade tolerant species. Rates of change in composition and structure are slow relative to younger forests. Different stages or classes of old growth will be recognizable in many forest types. Sporadic, low to moderate severity disturbances are an integral part of the internal dynamics of many old growth ecosystems. Canopy openings resulting from the death of overstory trees often give rise to patches of small trees, shrubs, and herbs in the understory. Old growth is not necessarily 'virgin' or 'primeval.' Old growth could develop following human disturbances. See id. at PDF, p. 2. Given that even "old growth forest" can develop following human disturbance, "mature forest" can also develop following human disturbance. Primary forest should still be considered mature or old growth even though they have been reset by natural disturbance. These disturbances are now accepted as a new habitat type called "complex early seral habitats," which even the Forest Service now recognizes in its forest plans. See, e.g., Draft Sequoia LRMP, p. 47 (available at <https://www.fs.usda.gov/project/?project=3375>). In fact, this description helps answer the second question asked about the definition reflecting changes based on disturbances and variations in composition (structure). See question 3. below. Moreover, "mature" forests are likely to be located in areas that are adjacent to "old growth" forests, creating a buffer area for late-successional old growth forests or areas that have predominantly been influenced by "natural" disturbances. From an "inventory" standpoint, a practical starting point for finding "mature" forest stands would be an inventory of stands that have seen some management based on Forest Service records from the last 50-80 years. These management records can serve as a guide to finding stands that are candidates for "mature" forests. Moreover, areas that have only been selectively logged or thinned should be included in the "mature" forest inventory. Already-protected forested areas, such as in Wildernesses, National Monuments, Wild and Scenic River, Botanical Areas, Research Natural Areas, Geological Areas, Scenic Areas, or any other areas that were designated by the agencies, a President, or Congress as protected from management, logging, or tree cutting should be considered defacto mature or old growth forests and should receive an additional layer of protection as "old growth." The bottom line should be that "mature" forests are defined in a manner that protects the majority of carbon, wildlife habitat, and watersheds on the landscape, and a

starting point should include all stands with trees that are 80 years and older, but also areas that have the potential to function as high productivity sites for carbon sequestration, regardless of age. Finally, the definition framework must acknowledge the complexity of ecosystems because mature and old growth forest stands are a part of old-growth ecosystems. The framework must respect habitat variety and landscape connectivity from a conservation biology perspective in order to achieve the conservation objectives of E.O. 14072.3. How can a definition reflect changes based on disturbance and variation in forest type/composition, climate, site productivity and geographic region? If the definition can reflect both natural and human disturbances as well as structural variations, as discussed above and as recognized in the Forest Service's description of "old growth," it can be a durable definition, which can accommodate variations in climate, site productivity, and geographic region. Once the mature and old growth forest stands are inventoried, those stands should have static protection as mature and old growth, regardless of those variations, and remain in the inventory despite natural or human-caused disturbances, which may include naturally- or human-ignited wildfires, drought, insect infestations, or even limited management around communities or structures. Individual forest plans may also provide guidance for areas that have or will develop as mature and old growth forests based on site productivity, such as the draft Sequoia LRMP: TERR-OLD-DC04: The number and density of old trees vary by topographic position and soil moisture. In general, more large and old trees are found on moister sites; on lower slopes, bottoms, and north and east aspects, especially where soils are deeper. Large trees are well distributed but are often clumpy. The densities vary by forest type as shown in table 7 [of the Forest Plan]. Trees greater than 40 inches in diameter, generally over 150 years old, represent the oldest trees, and comprise a significant proportion of large and old trees. In many areas of high soil productivity, trees grow to large sizes (around 30 inches in diameter) in fewer than 100 years. On low and very low soil productivity sites, the oldest trees may be smaller in diameter. Sufficient numbers of younger trees are present to provide for recruitment of old trees over time. Draft Sequoia LRMP, p. 46 (available at <https://www.fs.usda.gov/project/?project=3375>) Also, including the highest site productivity stands, regardless of age, will allow the forest to continue to rapidly sequester carbon and reach mature and old-growth forest characteristics. 4. How can a definition be durable but also accommodate and reflect changes in climate and forest composition? As was discussed above and is already acknowledged in the Forest Service's definition of "old growth," a definition that can take into account both natural and human disturbances as well as structural variations will be durable and able to account for changes in climate, site productivity, and geographic region. After being inventoried, mature and old growth forest stands should be given static protection as such, regardless of any variations, and should continue to be included in the inventory despite natural or human-caused disturbances, such as naturally or artificially sparked wildfires, drought, insect infestations, or even management around communities or structures. 5. What, if any, forest characteristics should a definition exclude? Forest stands whose predominant characteristics are those of a tree plantation should probably be excluded from the definition. With the exception of forest stands that have been selectively-logged or thinned, areas that have been clear-cut and replanted with a single tree species since the early 1960s should probably be excluded. Where, however, even-aged management has left seed trees or a shelterwood canopy, those stands should not be automatically excluded. For example, the Sequoia National Forest removed almost all trees around large monarch giant sequoias from several sequoia groves, which resembled clearcuts with large sequoias left standing. Stands such as these should be included as mature or old growth forests in the inventory, and their restoration to late-successional forests should be a goal of this effort. If you should have any questions, please contact Ren[acute] Voss. For Sequoia ForestKeeper, Sincerely, Ren[acute] Voss - Attorney at Law Ara Marderosian - Executive Director, Sequoia ForestKeeper

FOOTNOTES: 1 In 1989, the Chief of the Forest Service published his position, based on decades of input and analysis, which generally defined "old growth forest" as follows: "Old growth forests are ecosystems distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics which may include tree size, accumulations of large dead woody material, number of canopy layers, species composition, and ecosystem function." GENERIC DEFINITION AND DESCRIPTION OF OLD GROWTH FORESTS 10/11/89, PDF p. 2.