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Director, Ecosystem Management Coordination

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RE: Notice of intent to prepare an environmental impact statement (EIS) on Land Management Plan Direction for Old-Growth Forest Conditions across the National Forest System, 88 Fed. Reg. 88,043 (December 20, 2023).

I am an Indigenous forest ecologist of Raramuri and Western Apache mixed heritage with expertise in public policy as it pertains to Tribal self-determination in natural resource management, restoration, and conservation. I also have expertise in forest community ecology, fire ecology, wildlife, ethnobotany, and ecocultural restoration. I respectfully submit the comments below in response to the Notice of Intent (NOI) to prepare an environmental impact statement for land management plan direction for "old growth" forest conditions across the National Forest System. I write this comment from the perspective of a very formally trained Western scientist, and as a person with an administrative leadership position at the top-ranked college of forestry in North America, who sees

the world and the science that I do through Indigenous eyes. This perspective is also known as Two-Eyed seeing, in that it combines best Indigenous Knowledge (IK) and Western Science (WS) to inform innovation in natural resource restoration, stewardship, and conservation.

Commendably, the NOI does much to acknowledge the critical role of Tribes and Alaska Native Corporations and their IK in restoring climate resilience to US National Forests. Given that like all land in what is today the US, National Forests are these Tribal Nations' ancestral traditional lands, such acknowledgement creates a need to follow through with an amendment and EIS that honor Tribal Sovereignty with integrity. Below are some suggestions to increase the ability of this proposed amendment and EIS to do so.

## THE OLD-GROWTH FOREST CONCEPT

The concept of old-growth forest is a settler-colonial construct that does not exist in the Indigenous world. Indigenous Peoples see forests holistically, as a community. There are old trees (venerable elders) and young trees, and a rich, diverse understory of culturally significant plants, which function as soil-stabilizing, nitrogen-fixing species that maintain forest resilience. This Indigenous holistic view of forests needs to be fully addressed in the proposed amendment and EIS and actions that follow from those documents. As written, the NOI has a very singular focus on old-growth, with Tribal Nations involved in helping create management plans for our nation's forests. This is a remarkable benchmark for Tribal sovereignty and self-determination. However, Indigenous cultural stewardship practices, such as cultural burning and harvesting trees and plants, are not articulated clearly in the NOI. If Tribal involvement in old-growth forest adaptive management and co-stewardship is not decolonized to fully incorporate in a foundational manner Indigenous worldviews and IK, many Tribal Nations may not be interested in participating. The value of incorporating IK and involving Tribal Nations in forest adaptive management lies in the "new" paradigm this provides for old-growth forest conservation. It is actually an ancient paradigm that worked well (see Indigenous Cultural Stewardship Practices section below) for millennia. Continuing to protect old-growth forests and treat them like static systems in static reserves is the opposite of the Indigenous worldview about forests. This static perspective has contributed significantly to the ecological crisis (e.g., high wildfire, insect, and pathogen risk as described in the recent FS threat assessment) in which most of our nation's forests are today.

## INDIGENOUS CULTURAL STEWARDSHIP PRACTICES IN FORESTS

Prior to the arrival of Euro-American settlers, the US had a high population of Indigenous Peoples. The forests that the settlers encountered were healthy, diverse, and provided abundant food and wood resources for Indigenous communities. These forests had co-evolved with and depended on Indigenous cultural stewardship practices. Historically and today Indigenous cultural stewardship practices in forests include cultural burning and very respectful and selective harvest of trees to sustain human communities. Today's old-growth forests are highly departed from historical conditions (e.g., prior to colonization of what is today the US by Euro-American settlers). In the NOI cultural burning is mentioned. It would be useful to define it as based on the IK-informed Indigenous process of setting small, low-severity fires to keep forests open and stimulate growth of fire-dependent species, such as berry-producing shrubs, which in turn provided food for humans and wildlife habitat (e.g., deer). Because of their low severity, cultural fires also deposit carbon in the soil in the form of charcoal, thereby significantly contributing to carbon stocks in forests.

An essential component of Indigenous stewardship practices is flexibility. Indigenous Peoples see the world as

dynamic and always in flux. This dynamism is mentioned in the NOI. To acknowledge and proactively steward natural resources, Indigenous Peoples used place-based dynamic approaches that considered change as ever-present in the natural world. They did not use one-size-fits-all practices, even in the same place in the same season. In the proposed amendment and EIS, I suggest acknowledging the concept of change and the need to provide the flexibility to address change intrinsic to IK.

## VALUES

Tribal cultural values are missing from the statement on p. 88044 about the Forest Service's "longstanding commitment to manage old-growth forest conditions for multiple values including ecosystem diversity, habitat, recreation, aesthetics, and water quality." Cultural values include the ability of Tribes and Alaska Native Corporations to access their traditional lands within the National Forest System to hunt, gather, and collect plants for traditional food and medicinal use and the crafting of traditional cultural items, such as baskets. The importance of such cultural values is articulated later in this NOI. There needs to be consistent language, with an introductory section that clearly defines "cultural values" and this term used consistently throughout.

## CLARITY IN TERMINOLOGY

In drafting the forthcoming amendment and EIS documents, the following terms need to be better defined: "adaptive management strategies," "co-stewardship," "pro-active stewardship," and "reciprocity." The first two terms have been previously used by the federal government in a variety of contexts. Pro-active stewardship is a relatively new concept, in that "stewardship" implies taking care of something, rather than managing it. In the Indigenous worldview one doesn't "manage," one "stewards." Reciprocity is defined as mutually beneficial relationships between stewards and the land, plants, and animals they live among and rely on. In reciprocal culture, people have strong connection to a place and a moral responsibility to care for that place and its living beings.

## CO-STEWARDSHIP

The US federal government, specifically the Department of Agriculture and Department of Interior, need to more clearly define co-stewardship within the context of natural resource management and conservation, particularly co-stewardship policies that pertain to Tribal self-determination. Because of many situations where Tribal consultation was done at the last minute, or without full integrity and consideration of Tribal perspectives, Tribal Nations have a strong distrust of federal agencies' capacity to treat them with equity and inclusion with regard to co-stewardship. In order for Tribal co-stewardship to be effectively part of adaptive management and proactive stewardship of our nation's old-growth forests to increase their resilience to climate change and threats such as wildfire, this proposed amendment and EIS must be followed by a comprehensive national initiative to partner with Tribal Nations in co-defining co-stewardship more clearly and equitably. This will build Tribal trust and engagement in co-stewardship. I recommend using reciprocity as a core principle of co-stewardship.

## THE SEVENTH GENERATION PRINCIPLE

Indigenous Peoples' view of nature includes a duty to sustainability that considers impacts on future generations.

The Haudenosaunee call this the Seventh Generation Principle. Decolonizing management, stewardship, and conservation of old-growth forest would involve taking a more holistic temporal view that looks seven human generation back (a generation is approximately 20 years), to learn from our actions. This is followed by making decisions today mindful of the forests we are stewarding and ensuring those decisions support sustainability for seven human generations into the future. I suggest stating this principle when describing Indigenous perspectives on forest co-stewardship and proactive stewardship.

## ADAPTIVE STRATEGY TIMELINE

The NOI states (p. 88047), 1 (a) "Within two years, in consultation with Tribes and Alaska Native Corporations and in collaboration with States, local governments, industry partners, and public stakeholders, create or adopt an Adaptive Strategy for Old-Growth Forest Conservation." Given the scope of the proposed amendment and the short timeline, it is unclear whether the statement expressed above is realistically implementable with full integrity. Also, consultation has not worked well in the past. What will be done to increase Tribal engagement in consultation? Where will Tribal consultation lead? The NOI contains much progressive, inclusive, and socially just language regarding Tribal Nations in the section describing the development of the Adaptive Strategy. How will this be followed up on? How will Tribes and Alaska Native Corporations have a "safe space" to be truly heard, given the racism prevalent in many rural communities and the white privilege of US institutions (e.g., agencies, universities) and organizations (NGOs). Tribes are not stakeholders, they are sovereign nations, and as such need a decolonized space in which to speak openly and freely. I am concerned that despite the very best of intentions, the Indigenous Peoples involved may be unable to fully trust in this process, and also for cultural reasons, may be unable to respond rapidly and follow a tight, often rigid, federal timeline. Resources will be necessary to enable and support Tribal engagement in this process.

## BEST PRACTICES FOR WORKING WITH IK and TRIBAL NATIONS

To successfully be implemented, the proposed amendment and EIS and any resulting actions in co-stewardship to conserve our nation's old-growth forest must adhere to the following federal guidelines. I also strongly recommend the complementary guidelines created by other institutions for working with IK and Tribal Nations.

Federal executive orders and White House memoranda pertaining to IK and Tribal partnerships published since early 2021 make the strongest federal statements to date in the US about the importance of IK and the need to respect the rights of Indigenous Peoples. These memoranda give standing and validity to IK that is equal to WS. This is the first time the Office of the President and the White House have issued such decolonized formal statements.

The White House Office of Science and Technology Policy (OSTP) and the White House Council on Environmental Quality (CEQ) issued the following guidance, to assist federal agencies in understanding IK; help agencies develop and maintain mutually beneficial relationships with Tribal Nations; and incorporate IK in federal policies and practices. This memorandum states that "In light of the injustice and marginalization of Indigenous Peoples, it is incumbent on agencies to make sustained efforts to build and maintain trust to support Indigenous Knowledge." Accordingly, agencies should include the following principles and practices:

1. Acknowledge historical context and past injustice.
2. Practice early and sustained engagement
3. Earn and maintain trust
4. Respect different processes and worldviews
5. Recognize challenges
6. Consider co-management and co-stewardship structures
7. Pursue co-production of knowledge

The links in the footnotes contain more detail on this and the other IK and Data Sovereignty guidelines described below.

Other institutions have created complementary or similar guidelines. In 2020, the Native Nations Institute at the University of Arizona created the CARE Principles for Indigenous Data Governance. CARE stands for "Collective benefit, Authority to control, Responsibility, and Ethics." Intended to be globally applicable, these principles call for data ecosystems to be designed and function in a manner that allows Indigenous Peoples to benefit from data, specifically:

C1: For inclusive development and innovation

C2: For improved governance and citizen management

C3: For Equitable outcomes

The CARE Principles have received considerable attention internationally and, in the US, are actively used to inform emerging federal policies on Indigenous data governance.

The Indigenous Natural Resource Office at the Oregon State University (OSU) College of Forestry, a North American and global leader in forestry and forest science, has created the Principles and Best Practices for Working with Indigenous Knowledge and Partnering with Tribal Nations and Indigenous Peoples. This policy document applies to the OSU College of Forestry specifically, for any projects that involve working with IK and Indigenous Peoples. Like any R1 academic institution, a high proportion of the scientific research done at OSU is federally funded. As such, these principles align with the federal guidelines listed above and are closely tailored to an academic environment.

How then do we implement and scale our recommendations at a time when, given the magnitude of the

challenges we are facing, time is of the essence? Working with Tribes and Alaska Native Corporations requires patience and trust-building (see item 4 above) because of deep collective trauma done to Indigenous Peoples. Yet, we are at a moment in time when degradation of forests and urgency to adapt them to rapidly changing ecological conditions can bring us together across cultures. Rebuilding and maintaining that trust will be key.

Scaling and implementing the recommendations and guidelines in the proposed amendment involves braiding sweetgrass, with one strand representing IK, the second strand representing WS, and the third representing common, decolonized ground-our deeply shared concern for current and future forests and our common resolve to foster their resilience. Now is the time to implement the Seventh Generation Principle in restoring climate resilience to our Nation's forests. Now is the time to adopt a land ethic of reciprocal stewardship informed by IK and WS.

Respectfully,

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(See attachment for access to the footnotes)

FOOTNOTES:

1 Reid et al. 2020 <https://doi.org/10.1111/faf.1251G>

2 Long et al. 2021 <https://www.sciencedirect.com/science/article/pii/S0378112721006873> ; Lake et al., 2017 <https://doi.org/10.5849/jof.2016-043R2>

3 Boyd, 2022. *Indians, Fire, and the Land in the Pacific Northwest* (Corvallis, OR: Oregon State University Press); Cronon 2003. *Changes in the Land* (New York: Hill and Wang).

4 Clarkson et al., 1992. [https://www.iisd.org/system/files/publications/seventh\\_gen.pdf](https://www.iisd.org/system/files/publications/seventh_gen.pdf)

5 OSTP and CEQ 2022 Guidance for federal departments and agencies on Indigenous Knowledge. <https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf>

6 Ibid

7 Carroll et al. 2020. The CARE principles for indigenous data governance. Data Science Journal, 19, pp.43.  
[https://static1.squarespace.com/static/5d3799de845604000199cd24/t/6397b1aff7a6fb54defdf687/1670885815820/dsj-1158\\_carroll.pdf](https://static1.squarespace.com/static/5d3799de845604000199cd24/t/6397b1aff7a6fb54defdf687/1670885815820/dsj-1158_carroll.pdf)

8 Jennings et al. 2023. Applying the Care Principles for Indigenous Data Governance to ecology and biodiversity research. Nature ecology & evolution, 7(10), pp.1547-1551. <https://www.nature.com/articles/s41559-023-02161-2>

9 Carnegie Classification of Institutions of Higher Education, <https://carnegieclassifications.acenet.edu/> Research universities are ranked by their research productivity. An RI institution is one that offers doctorates and has very high research activity, as measured by productivity (funding, publications, graduation rates).

10 Oregon State University College of forestry, Principles and Best Practices for Working with Indigenous Knowledge and Partnering with Tribal Nations and Indigenous Peoples.  
<https://www.forestry.oregonstate.edu/sites/default/files/Principles%20and%20Best%20Practices%20Volume1%20Final.pdf>

11 Kimmerer, R. W. 2013. Braiding Sweetgrass; Kimmerer 2024. Now is the Time to Support Indigenous Science  
<https://www.science.org/doi/10.1126/science.ado0684>

ATTACHMENT: Eisenberg\_Cristina\_NOI\_Comment\_02-02-24.pdf is letter content.