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Comments: I am a biochemist and a college professor who has been teaching environmental chemistry for over 30 years. I am writing today to advocate for a Northwest Forest Plan with strong protections for mature and old-growth trees.

Mature trees protect the whole forest by using soil fungus networks to connect with all the trees around them. They to pass resources like sugars and nutrients to younger trees and release signaling molecules to warn of drought and insect attacks, so neighboring trees can prepare. This interconnectedness sustains and protects the greater forest ecosystem, which we rely on for clean air and clean water. Intact, healthy forest ecosystems are also excellent at absorbing and holding carbon dioxide, which protects us from global climate change's weather destabilization and resulting drought conditions that feed wildfires. Mature and old-growth trees take care of their own progeny and they take care of unrelated neighboring trees and they take care of us.

Removing old-growth and mature trees shuts down the communication network and negatively impacts the health of the entire forest. By proxy, that impedes its ability to act as our ecological life support and its availability to support the economic, cultural, recreational, and scientific endeavors we value and enjoy and need. While it is easy to see how intact forests support some of our most basic physiological needs for survival by providing oxygen, sequestering carbon dioxide, storing moisture, and removing pollutants from air and water, they also support our emotional well-being.

"A growing body of research points to the beneficial effects that exposure to the natural world has on health, reducing stress and promoting healing...'Nature is not only nice to have, but it's a have-to-have for physical health and cognitive functioning.' These studies have shown that time in nature - as long as people feel safe - is an antidote for stress: It can lower blood pressure and stress hormone levels, reduce nervous system arousal, enhance immune system function, increase self-esteem, reduce anxiety, and improve mood. Attention Deficit Disorder and aggression lessen in natural environments, which also help speed the rate of healing."  
(<https://e360.yale.edu/features/ecopsychology-how-immersion-in-nature-benefits-your-health>)

Henry David Thoreau's words resonate with Northwesterners: "I took a walk in the woods and came out taller than the trees."

I support updating the Northwest Forest Plan, but its revision needs to be done so to preserve the forest's matriarchs and greater forest integrity. I urge the U.S. Forest Service to

- 1.Strengthen protections for mature and old-growth forests to ensure habitat, water quality, and carbon storage, and recruit more mature and old forests to restore a functional ecosystem.
- 2.Maintain or expand protections for the network of forest reserves to allow natural processes to flourish, ensure connectivity for wildlife, and support the recovery of imperiled species. Any reduction in forest reserve protections would increase harmful impacts such as habitat destruction, sediment in streams, and carbon loss, further endangering sensitive ecosystems.
- 3.Genuinely consult with Tribes, respect their sovereignty, and provide resources to support their full participation in decision-making. The Forest Service must support co-stewardship agreements, cultural burning practices, first food harvesting, and youth education while ensuring equitable access to planning processes. Pairing these components with the Forest Service's plan for weakened environmental protections is a false choice manufactured by the agency.
- 4.Address environmental justice by analyzing impacts on air, water, and communities and ensuring fair, sustainable working conditions.

5.Shift wildfire strategies to prioritize community safety and proven prevention measures over logging.

The U.S. Forest Service must reject plans to weaken core protections of the Northwest Forest Plan. Maintaining and expanding protection for forest reserves is critical to preserving biodiversity, clean water, and the long-term climate benefits our forests provide. As you consider options, please keep in mind that "What we are doing to the forests of the world is but a small reflection of what we are doing to ourselves and to one another." (Mahatma Gandhi)