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First name: Trygve
Last name: Steen
Organization:
Title:
Comments: Allow me to introduce myself, so you have some understanding of my perspective. I have taught forest ecology at Portland State University in Oregon since 1970, with a special focus on the biodiversity of mature and especially old-growth forested ecosystems. I have been on the ground in all of the National Forests in the Pacific Northwest region. I have done extensive aerial documentation of forest management activities in the Pacific Northwest, so I have a landscape perspective. I was involved in the Hungry Bob portion of the Nationwide Fire and Fire Surrogates study done in the 1970's, doing both on the ground and aerial documentation. In addition, I have visited many areas of older forests in all of the Northern United States.

I have also followed current research on the properties of mature and old growth forests for their three major values: 1) effective carbon dioxide sequestration; 2) providing even flows of quality water as well as minimizing flooding from major rain events; and 3) biodiversity protection. All three of these areas of ecological value from older forests provide critically important environmental benefits at the present time. Clearly regional definitions of mature and old growth forest characteristics need to be formulated and are beyond the scope of my document.

Given the extreme importance of addressing climate change at the present time, the large tree component (mature and old growth trees) of any forest in the United States performs the significantly important function of carbon dioxide sequestration. It is essential to recognize that when we log large trees, this unfortunately results in significant additional carbon dioxide input to the atmosphere, rather than benefitting from that forested landscape continuing to sequester carbon dioxide. This nation's National Forests, with their significant areas of landscape covered by trees that are over 90 years old, offer a unique opportunity to perform the essential function of carbon sequestration. At this point in history, we need to focus on the carbon dioxide sequestration capabilities of those forests. Unfortunately, the dominance of short rotation industrial forest practices (35 to 50 year rotations) on privately held lands here in the Pacific Northwest results in those forests being a net source of carbon dioxide rather than contributing to carbon dioxide sequestration. These forestry practices contribute even more significantly to climate change.

BENEFITS OF NOT LOGGING MATURE AND OLD GROWTH FORESTS:

CARBON DIOXIDE SEQUESTRATION: Clearly national forest management can best focus on maximizing carbon dioxide sequestration at this critical time - - - by not logging mature and old-growth trees. It is essential to recognize that mature and old growth forests are the only proven, large-scale system we have for absorbing carbon and locking it away for centuries.

BIODIVERSITY: Older forests support and better protect the biodiversity on which forest ecosystems depend. This helps address the planetary biodiversity crisis. The biodiversity crisis is real and very significant, in spite of the general lack of recognition of that reality.

WATER: Older forests provide a more even and reliable flow of quality drinking water. In the water supplies for many coastal cities, summer flows of water from watersheds covered by short rotation forest operations are becoming inadequate to support their summer tourist-based economies. Older forests could provide critically needed summer flows.

SOIL BENEFITS: Older forests protect and enhance the fundamental soil resource. Logging operations unavoidably cause damaging soil compaction, especially as logging becomes increasingly mechanized. This harms the soil food web, which is essential for supporting optimal forest growth. Forest soils need more time to recover than is commonly provided in logging rotations.

FIRE RESISTANCE: Older forests are more fire resistant than plantations and younger forests, and they will be even more fire resistant when they include areas of deciduous trees. Remember, the most easily ignited and burned parts of a landscape are the young monoculture plantations of conifers, which we should be minimizing.

POST-FIRE VALUE OF TREES: Older trees retain significant economic value after they have been killed by a fire, unlike trees in plantations younger than 25 years. When a plantation of trees burns before about the age of 25 years, it burns easily and represents a total loss of the timber value. In fact, the residue is a liability. Growing trees for only 35 to 45 years, as is common for industrial tree growing operations in the PNW, leaves a major fraction of the growing period vulnerable to a total loss.

ECONOMIC IMPACTS: Large trees produce higher quality wood, which is a niche that has special value. However, excessive focus on short rotation resource extraction-based forest operations has serious liabilities for all aspects of forest benefits.

SPIRITUAL AND RECREATIONAL: Older forests provide an important amenity value, through their recreational and spiritual values. This substantial benefit of older forests represents a second paycheck for people in all regions of the US that are near older forests and this is a major factor in supporting a more diversified economy. Clear-cuts and tree plantations have a very low recreational value.

IN SUMMARY: We need to be carefully growing mature and old growth trees, while protecting their ecosystems in our nation's forests. We need to recognize that moving our National Forests toward being older has significant benefits for ourselves and our future. This will be a challenge that is essential to meet. Resolute action needs to be taken so that change can occur to support the maintenance and growth of mature and old growth forests.

Two scientific papers that document the distribution and importance of mature and old growth forests with their in-depth analysis:

Title: Carbon sequestration and biodiversity co-benefits of preserving forests in the western USA.
By Buotte, P.C.; Law, B.E.; Ripple, W.J.; and Berner, L.T.
Citation:  doi; 10.1002/EAP.2039

There is also a highly significant paper in press that analyzes mature and old growth forest distribution in the entire USA.
A principle author is Dominick Della Salla.
He is President and Chief  Scientist at the Geos Institute.