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Comments: Thank you for taking public comments about Biden's Executive Order to Strengthen America's Forests, Boost Wildfire Resilience, and Combat Global Deforestation by taking new actions to protect against wildfire threats, support local economies, and reduce climate pollution. I am deeply grateful that the Fact Sheet about this plan covers many important and well-thought-out goals, such as:
*Safeguard mature and old-growth forests on federal lands, as part of a science-based approach to reduce wildfire risk [because old growth trees are more resilient to fire]
*Strengthen reforestation partnerships across the country to support local economies and ensure we retain forest ecosystems and sustainable supplies of forest products for years to come.
*Combat global deforestation to deliver on key COP26 commitments.
*Enlist nature to address the climate crisis

There is one HUGE problem with this plan: It does not include "PROFORESTATION" efforts that would preserve the old growth that we currently have.

Robert T. Leverett has proven that old growth trees sequester 75 percent of their total carbon after 50 years of age. In a Smithsonian article about Leverett, the author says:

"If the goal is to minimize global warming, climate scientists often stress the importance of afforestation, or planting new forests, and reforestation, or regrowing forests. But there is a third approach to managing existing forests: proforestation, a term coined by climate scientist William Moomaw to describe the preservation of older existing forests. (Moomaw was a lead author of five major reports of the Intergovernmental Panel on Climate Change, which was awarded the Nobel Peace Prize in 2007.) All of these strategies have a role to play. But what [Robert T.] Leverett has helped show in the last few years is how much more valuable proforestation is than we first thought. He has provided hard data that older trees accumulate far more carbon later in their life cycles than many had realized: In studying individual Eastern white pines over the age of 150, Bob was able to determine that they accumulate 75 percent of their total carbon after 50 years of age-a pretty important finding when every year counts in our struggle to mitigate the effects of climate change. Simply planting new forests won't do it." [1]

In fact, Leverett has found a precise way to measure HOW MUCH carbon that each individual tree sequesters in the soil as it ages. In a chart that Leverett prepared with some of the most precise tree measurements, he determined that

27 old growth trees (~ 175 to 195 years old in Mohawk Trail State Forest in Charlemont, Mass) have sequestered 284.74 TONS of Cumulative Carbon in the soil below them. [2]

Leverett even asks the following question:

But wouldn't younger, fast growing pines do more work for us in sequestering carbon? That is the general perception. But is it true? A moderately fast growing pine at 50 years may hold 80 ft3 of trunk volume. Adding 7% for limbs, gives us 85.6 ft3. The fastest we have measured is approximately 166 ft^3. Using a density of 24 lbs/ft3 and 48% carbon by weight, we get 986.1 lbs or 0.493 tons of carbon in our moderately growing young pine and 0.959 ft3 for the fastest. By comparison, Saheda (which is ONE ~ 190 year old white pine) holds 5.42 tons in trunk and limbs. It would take eleven 50-year old moderately fast-growing white pines to provide this much carbon, and 5.65 extremely fast growing 50-year old pines. [2]

So, one 50-year old white pine can store .493 tons of carbon,

while one 190-year-old white pine can store 5.42 tons in its trunk and limbs?!

Multiply 10 to 27 old growth trees per acre by 5.42 tons of carbon stored,
by 240,000 acres that may be logged in the coming year, and then see what you get!
That amount of carbon would be WORTH saving!

While the figure above would be a gross estimate by an amateur, the truth is, that by preserving old growth trees and protecting them from logging, we would be using a "Nature-Based" strategy to address enormous amounts of climate pollution!

Unfortunately, 240,000 acres of Old Growth Forests in the US are slated to be cut down BEFORE this Executive Order's "inventory of mature and old-growth forests on US federal lands" is completed in one year. While it is important to do this work, we cannot delay taking action NOW to protect the old growth forests that will be cut down during the current year. As you will see in the following Report entitled "WORTH MORE STANDING" [3], there are many forest ecologists who already intimately know the areas that need protecting. The Worth More Standing report names ten mature and old growth forest areas that will be logged during the upcoming year if we do NOT protect them. We MUST give these old growth areas Federal Protection NOW. Please make this your number ONE priority.

Forests are MUCH more complex ecosystems that we ever fathomed. With the work of Suzanne Simard (Finding the Mother Tree: Discovering the Wisdom of the Forest) and other forest ecologists, we now understand that forests are interdependent communities that connect native trees, plants, animals and fungal networks with one another. And now there is proof that clear-cutting destroys the life in the soil that is necessary for sustaining old growth forests as forests. [4]

So far, few citizen efforts have worked to save ANY old growth forests in the U.S. I am hoping that that fact changes with this administration.

Thank you for your kind consideration of these ideas.

FOOTNOTES:

[1] The Old Man and the Tree. Old, Primeval Forests May Be a Powerful Tool to Fight Climate Change | Science | Smithsonian Magazine.https://www.smithsonianmag.com/science-nature/the-old-man-and-the-tree-180979242/ Ecologists thought America's primeval forests were gone. Then Bob Leverett proved them wrong and discovered a powerful new tool against climate change.

[2] Elders Grove Nature Trail. By Robert T. Leverett, Interpretive Submission #1 to DCR from Friends of Mohawk Trail State Forest and the Native Tree Society. Charlemont, Mass. December 31, 2011, updated Jul 21, 2017, updated July 11, 2018. https://www.uvm.edu/femc/attachments/project/1379/MTSF-Elders_Grove_Trail-Update-7-11-2018-7-17-2019.pdf

EXCERPTS:

a) The Emerging Carbon Story
We may ask ourselves what are the specific values that we can associate with the Elders Grove pines. The pines are certainly inspiring to look at, but with only 27 of them, what other values do they possess? One value is their role in climate stability. They sequester almost 78 tons of carbon as shown in the table below. The table has not been updated to show the 5th 160- footer, but is close enough in terms of the carbon.

[In the chart located on p. 30,
27 old growth trees (~ 175 to 195 years old) have sequestered 284.74 TONS
of Cumulative Carbon in the soil below them.]

The above numbers utilize a volume model that is based on trunk form factor. The trunk volume uses the simple formula....

b) But wouldn't younger, fast growing pines do more work for us in sequestering carbon? That is the general perception. But is it true? A moderately fast growing pine at 50 years may hold 80 ft3 of trunk volume. Adding 7% for limbs, gives us 85.6 ft3. The fastest we have measured is approximately 166 ft^3. Using a density of 24 lbs/ft3 and 48% carbon by weight, we get 986.1 lbs or 0.493 tons of carbon in our moderately growing young pine and 0.959 ft3 for the fastest. By comparison, Saheda (which is ONE ~ 190 year old white pine) holds 5.42 tons in trunk and limbs. It would take eleven 50-year old moderately fast-growing white pines to provide this much carbon, and 5.65 extremely fast growing 50-year old pines.

[3]. REPORT: Worth More Standing: 10 Climate-Saving Forests Threatened by Federal Logging. This report was prepared for the Climate Forests coalition, which works to protect mature and old-growth trees and forests from logging across America's public lands. Contributing organizations to the report include Applegate Siskiyou Alliance, Cascadia Wildlands, Center for Biological Diversity, Environment America, Environmental Law and Policy Center, Earthjustice, Klamath Forest Alliance, Klamath Siskiyou Wildlands Center, Oregon Wild, Natural Resources Defense Council, Sierra Club, Southern Environmental Law Center, Standing Trees, The Larch Company, Wild Heritage and Yaak Valley Forest Council. https://publicinterestnetwork.org/wp-content/uploads/2022/05/Worth-More-Standing.pdf

[4]. Out of Sight: At the microscopic level, soil from Germany's Black Forest is a fantastical realm -- one that's mirrored in wooded ecosystems worldwide. By Ferris Jabr, National Geographic Magazine, pp. 82-99, September, 2022.

Excerpts:
It's increasingly clear that soil is a dynamic network of habitats and organisms -- an immense, ever changing tapestry woven with the threads of innumerable species. Soil is itself alive. [Sue] Grayston and other ecologists now argue that this modern understanding requires substantial changes to forestry. The common practice of clear-cutting does far more widespread and long-lasting damage than ever imagined, they discovered. It's not enough to consider how felling trees alters the forest from the trunk up. To be truly sustainable, forestry also needs to reckon with the consequences for all that lies beneath. p. 92

Many of their studies compare three types of logging: clear-cutting, which strips all trees from a given site; aggregated retention, which preserves clumps of trees; and dispersed retention, which selectively removes individual trees, retaining a uniform distribution [of the necessary fungal networks and microorganisms in the soil]. p. 93

Related research tracing the flow of carbon through tree roots revealed that the zone of influence for a tree or cluster of trees -- the area across which they actively supply microbes and other tiny organisms with carbon-rich molecules -- extends about 33 feet on average. Retaining patches of trees in otherwise naked soil -- even large patches -- can only do so much. Outside of a 33-foot zone surrounding those vegetal islands, microbial populations will suffer. Dispersed retention [of trees] is better for soil health, Grayston says, because it typically preserves a tree every 46 to 52 feet, which allows their roots and respective zones of influence to overlap, providing carbon to microbes throughout the forest floor. pp. 99 -100