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Comments: A national level definition of Old Growth forests won't be of any value nor accepted if it is not straightforward and able to be effectively used to identify where Old Growth forests or individual Old Growth trees exist.

Providing a broadly applied age threshold based on average conditions and science-based factors should be a first step (for instance, defining Old Growth at 200 years of age and Mature at 120 years).

Calculating the average typical diameter of different conifers at those ages (200 years and 120 years) can then provide federal agencies with specific threshold criteria limits such as defining an Old Growth ponderosa pine at 44" dbh or an Old Growth white fir at 40" dbh.

Using the resulting thresholds, the agency can systematically restrict commercial cutting of trees in the Old Growth category and limit the percentage of Mature trees to be cut.

Without such a clear and easy-to-apply definition and identification strategy, a more nuanced and complex definition or identification approach will not produce a usable nation-wide policy.

DEFINING OLD GROWTH AND MATURE FORESTS SO THAT THE DEFINITION ALLOWS AN INVENTORY TO BE ACHIEVABLE AND CREDIBLE

What the overall national level planning process is attempting to do is captured in four short bullet points:

- * define old-growth and mature forests on federal lands
- * complete an inventory and make it publicly available
- * identify threats to mature and old-growth forests
- * develop policies to address threats

EASIER SAID THAN DONE[hellip]

Our non-profit conservation organization did one of the first exhaustive on-the-ground field inventories of old growth conifer forest stands of an entire national forest in the early 1990s as over two years our staff and volunteers drove and walked countless miles through the Stanislaus National Forest northwest of Yosemite National Park to assess forests stands to locate old growth trees and groves.

Not surprisingly, a large percentage of surviving Old Growth was found within wild, roadless forest areas that had not yet been roaded nor logged. Other blocks and substantial patches of remaining Old Growth conifer forest stands could be found on very steep, difficult to access slopes in rugged river canyons or tucked along upper elevation, remote ridges.

Individual very large old trees could also - to a limited degree - still be found at campgrounds, prime recreational sites, special management areas, or directly adjacent to communities. Overall, however, the vast majority of Old Growth trees - then as well as now - are found in areas where logging was limited or totally absent.

THE LESSONS LEARNED BY OUR ENVIRONMENTAL CENTER 30 YEARS AGO CAN BE HIGHLY APPLICABLE FOR THIS NEW EFFORT AT THE NATIONAL SCALE.

Defining old-growth and mature forests in non-measurable terms may provide nice science verbiage and allow for lots of agency discretion, but all of the definitions that have been used by the agency over the years are basically worthless because they cannot be easily applied to produce a clear, definitive inventory.

Having a nuanced, less-than-obvious, or difficult-to-measure definition of OLD GROWTH or MATURE forest makes any inventory nearly impossible to do [ndash] especially on a gigantic scale such as across all federal forest lands. A definition needs to be clear and simple to apply.

Discussing stand structure or evidence of decay or other ecological features of old growth forests means nothing if the agency cannot accurately apply the attributes to come up with a clear inventory of OLD GROWTH on public forest lands.

DEFINING A VERY SPECIFIC AGE CRITERIA THRESHOLD (SUCH AS 180 YEARS OR 200 YEARS OF AGE FOR A CONIFER SPECIES) AND THEN DOING RESEARCH OR TAKING FIELD MEASUREMENTS TO COME UP WITH TYPICAL TREE SIZE IN DIAMETER FOR TREES FOUND TO BE THAT AGE -- CAN PROVIDE A CLEAR MEASURABLE DIAMETER THRESHOLD FOR SPECIFIC CONIFER SPECIES.

EXAMPLES :

White firs might be defined as OLD GROWTH at 40-inch dbh:

Ponderosa pines might be OLD GROWTH at 44-inches dbh;

Incense cedars might be OLD GROWTH at 42-inches dbh,;

while sugar pines might be defined as OLD GROWTH at 44-inches dbh.

Similarly, for MATURE conifer trees of 120 years of age or greater:

White firs might be defined as MATURE at 34-inch dbh:

Ponderosa pines might MATURE at 36-inches dbh;

Incense cedars might be called MATURE at 34 inches dbh;

while sugar pines might be defined as MATURE at 36-inches dbh.

The above are just examples from the Sierra Nevada region of how using diameter criteria could be applied to define OLD GROWTH or MATURE individual trees, and federal agencies could take the same steps to evaluate sites elsewhere such as along the north coast of California where they might define a redwood as MATURE at 42 inches and OLD GROWTH at 48 inches dbh.

The timber industry across the West has extensive information about how many years it takes different conifer species to reach a certain diameter on average (given high site soil characteristics, sufficient moisture, and a lack of competitive stress from other trees).

Using such information, the USFS and BLM can fairly quickly ascertain the average diameter limit for trees at a certain age threshold that can be accepted as OLD GROWTH.

After further evaluating many broadly supported proposals from countless citizen activists, it has become clear that to be useful at a national scale, this process will not be a strictly science-based exercise. What matters the

most is for interests on all sides of the topic to see that the federal agencies are producing an understandable OLD GROWTH definition and a credible inventory that is based upon that definition.

IF IT IS DEFINED IN SUCH A WAY THAT IT CAN BE BROADLY UNDERSTOOD AND BROADLY APPLICABLE, THEN IT WILL FAR MORE LIKELY RESULT IN PUBLIC ACCEPTANCE AND EFFECTIVE USAGE BY FEDERAL FOREST MANAGERS.

So a first strong recommendation is to adopt easily understood age limits as the defining factor in determining a conifer tree to be either OLD GROWTH or MATURE or other[hellip]

Our recommendation is: OLD GROWTH CONIFER = 200 YEARS OF AGE

Our recommendation is: MATURE CONIFER = 120 YEARS OF AGE

IF THE FEDERAL AGENCIES ARE WILLING TO APPLY THIS STRAIGHTFORWARD 200 YEARS OF AGE APPROACH AS THE DEFINING FACTOR FOR OLD GROWTH FOR CONIFERS, AND IF THE AGENCIES ARE WILLING TO APPLY THAT AGE CRITERIA TO COME UP WITH THE AVERAGE SIZE FOR EACH MAJOR CONIFER SPECIES FOUND ON FEDERAL FOREST LANDS AT THAT AGE, THE MOST DIFFICULT STEP WILL HAVE SUCCESSFULLY BEEN ACHIEVED.

The third and fourth objectives of the Old Growth assessment plan are to identify threats to OLD GROWTH and MATURE forests and to develop policies to respond to those threats.

KEY, PRIORITY THREATS TO OLD GROWTH FORESTS

None of the key threats to OLD GROWTH forests exists in a vacuum. The combination of hotter, drier climate conditions due to climate change along with a longer fire season, more extreme fire season with more wind events, all overlaps with the increased threats of bark beetles killing MATURE and OLD GROWTH conifers because all of these stress factors can overlap or combine.

THE FOLLOWING ARE PRIMARY THREATS.

- 1) CHANGING CLIMATE CONDITIONS CAUSE MORE DROUGHT STRESS FOR TREES
- 2) INCREASED HIGH-SEVERITY WILDFIRES OVER LONGER FIRE SEASONS POSE FAR HIGHER RISK OF KILLING OLD GROWTH AND MATURE TREES THAN 20-50 YEARS AGO.
- 3) SIGNIFICANTLY HIGHER PULSES OR IRUPTIONS OF BARK BEATLES POSE SEVERE RISK TO MATURE AND OLD GROWTH TREES.

SECONDARY THREATS INCLUDE:

- 1) LOGGING - DONE EITHER WITHOUT PROTECTION FOR LARGE, OLD TREES OR DONE TO CUT DOWN SUCH TREES BASED ON JUDGMENT THAT TREES ARE DECADENT, A SAFETY RISK, OR A HAZARD OF SOME KIND.
- 2) LACK OF SUFFICIENT MANAGEMENT TREATMENTS ON LANDS SUITABLE FOR FOREST MANAGEMENT ACTIONS [ndash] RESULTING IN OVER-CROWDING, SITE COMPETITION, AND A LACK OF WATER DURING DROUGHT PERIODS IN PARTICULAR.

SUMMARY OF RECOMMENDED NATIONAL LEVEL STRATEGY:

Considering the best available science, identify a generally accurate age threshold to define OLD GROWTH (perhaps 200 years of age) and MATURE (120 years of age) that can be broadly assigned to either all tree types or at least to all commercial conifer trees.

OLD GROWTH = 200 YEARS

MATURE = 120 YEARS

Determine a fairly typical diameter size of individual trees of various tree species at 200 years of age that can be uniformly applied as a diameter limit to that specific conifer species to qualify it as OLD GROWTH.

Do the same to determine the average diameter of a tree species at 120 years of age to qualify it as MATURE.

(Applying a 30" diameter limit generically for forest management in the Sierra Nevada region over the past 20+ years has proven workable, simple to understand, generally accepted by all sides once initiated, and easily monitored to assess compliance. Build on success[hellip])