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Comments: My concept of old growth stands includes not only vegetation but all of the animals (insects, mammals, birds, arachnids, reptiles and amphibians) that live there. I am a botanist, specifically a lichenologist, so my comments focus on those organisms.

Old growth in the PNW west of the Cascades can be assessed using many tools that have been published:

1. Tree age > 120 years
2. Continuity of forest - how long has the stand been forested?
3. Complex forest layers including shrub and understory levels, including many species
4. Logs of all species and ages including older or equal in age to the standing trees
5. Lichen communities that include cyanolichens as well as lichens with green algal photobionts
6. Calicioid lichen communities that are complex, with at least 12 species but often as many as 24 species present, depending on location. This high diversity illustrates and depends on the diversity of microhabitats in an old growth forest.
7. Forest gaps where pathogens have killed the dominant overstory species, allowing other species to grow
8. Complex forest floor communities, including bryophytes and forbs

In forests east of the Cascades, trees are spread wider apart with fewer shrubs and a thinner or non-existent understory. Although lichen communities on the east side of the PNW are more complex than in younger east-side forests, in general the lichen communities are less complex than seen in PNW forests west of the Cascades, as is shown by FIA data. However, these old growth forests are still complex, with logs of all ages, shrubs and understories, forest floor communities, and gaps.

The complexity of old growth stands is an interwoven web of organisms, and the change from a young stand or a plantation into old growth does not happen one organism at a time but instead in clusters of interdependent organisms. Clusters like this tend to originate in special habitats, usually where water is plentiful - obviously creeks, lakes but also small pockets where water stands long into the dry season, for instance among rock outcrops and small swamps and marshes. Complexity grows outwards from these clusters and in an old growth forest clusters lead to the huge diversity found in a stand.

Unfortunately, many forests in the PNW that have trees over 200 years old do not have complex communities as outlined above. However, if the trees are over 200 years old, these forests need to be preserved since just growing trees that old takes 200 years. With the trees as a starting point, the forest can be grown to become a complex system, without the help of people. This would be the case, for instance, when a fire has burned through an area leaving older trees intact, or when the understory has been removed for fire prevention.

Cutting these old trees is counter-productive when trying to "maintain or restore ecological integrity". In fact much management of old stands is counter-productive to building the complex old growth forest. In addition, cutting and removal of post-fire trees is in the long run detrimental to forest recovery. The clusters of diversity start among the logs and standing trees, eventually bringing back the high diversity of a healthy old growth forest.

I am not sure what the President's plan is for old growth inventory. I believe we need to maintain not only the few healthy old growth forests that remain, but also stands that are old enough to become healthy old forests. This includes managed old stands that may have low diversity because of understory and shrub removal, fire-damaged stands and stands that have been selectively cut leaving only a few old trees standing. In addition, areas with high diversity of special habitats need to be preserved, since these are where high diversity of organisms begins. For these reasons, I believe that the President's call for an inventory of old growth forests is

just a beginning to restoring the health of our forests and preserving our rich forest heritage.

References (not a complete list by any means!)

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