The perilous and important art of definition: the case of the old-growth forest

Kathleen Dean Moore and Michael Paul Nelson*
*Oregon State University, Corvallis, OR *(mpnelson@oregonstate.edu)*

Front Ecol Environ 2023; 21(6): 264–265, doi:10.1002/fee.2661

On Earth Day 2022, US President Biden issued Executive Order 14072 (https://www.federalregister.gov/executive-order/14072), calling for – among other actions – an enduring definition of mature and old-growth forests. The assignment is not just an intellectual exercise. How forests are mapped in the mind will determine how forests are mapped on the ground, shaping both landscapes and policies. In their own work, ecologists and environmental scientists are called upon to define the terms that fundamentally shape how they perceive, describe, measure, and evaluate their worlds. Defining is consequently an important, foundational art for scientists, and it should be done well, with careful intentionality and critical self-awareness.

We – the authors of this commentary – are two professional philosophers who have spent careers teaching critical thinking, including the fine points and fallacies of definition in the ecological realm. Defining is a perilous art and there are many ways it can go wrong. Here, using the case of mature and old-growth forests, we offer some guidelines, and some warnings, for those engaged in defining terms within their work.

Resist writing a persuasive definition. There are many types of definitions. A *lexical* definition reports how a word is most commonly used, as dictionary-based definitions generally do. A *stipulative* definition declares that a certain word will be used in a certain way, which may or may not be its common usage. The risk comes when a stipulative definition becomes a *persuasive* definition – while purportedly *describing the uncontested meaning* of a term, in reality the definition *stipulates* a particular meaning to support an argument or action. That is a sort of logical bullying, assuming the power to settle the issue before it is even raised, as when Humpty Dumpty told Alice he could make a word mean whatever he wanted it to mean, depending on what served his purpose (Carroll L. 1865. Alice's Adventures in Wonderland. London: Macmillan & Co). This is a logical fallacy because it assumes what is in fact contested. An example is the definition of a "virgin" forest as one that has not been changed by humans – a persuasive definition that was used to justify removal of Indigenous people from forested lands.

Be aware of how hidden assumptions may already influence the defining process. The task assigned by Biden's Executive Order tacitly assumes that forests and forest products generally fall into the category of commodities – entities that can be traded for other human goods, such as money or building materials. Given that assumption, the task is to identify a category of forest that is so exceptionally valuable as a living entity that it should be preserved. It would offer quite a different assignment if the Executive Order assumed that, as a general rule, forests should be preserved. Then the challenge would be to identify the expendable forests – those that can be turned into job opportunities and human goods such as lumber.

Avoid defining a whole as the sum of its parts. It might be possible to define an old *tree* by age, height, basal area, canopy cover, and so forth. But a *forest* is not the sum or even the average of its trees. A forest has complexity, continuity, community, and other characteristics that a mere aggregation of trees does not. Moreover, it has complicated and impactful interactions with the communities around it, such that drawing definitional boundaries around a forest may be a mistake from the start. That said, it may be useful nonetheless to identify exceptional survivors, ancient trees that stand alone as champions of carbon sequestration or providers of essential habitat, as reminders of what has been lost around them, or even as testament to the possibility of human restraint.

Beware of the hegemony of numbers. Scientists, land managers, and others trained primarily in 20th-century Anglo-American traditions have been taught that empirically verifiable statements have privileged standing in making decisions. This may be why environmental scientists tend to default to numbers as descriptors. But some attributes that cannot be described by numbers are real and meaningful characteristics of forests. An obvious example is beauty. And some attributes that *can* be described by numbers are irrelevant to the definition. An example is the number of jobs that would be created by felling the trees. So, while having the advantage of allowing for comparisons across time and space, replication, manipulation by machines, etc, numerical descriptors carry the risk of distorting or entirely missing important characteristics of what is being defined. An enduring definition might use numbers, but it might be just as useful to use rubrics, stories, scenarios, ceremonies, and the arts.

Consider the diversity among forests themselves, as well as the pluralism of worldviews and perspectives of those interacting with them. Old forests come in a great variety. Any definition will be challenged to include forests as different from one another as temperate rainforests in the Pacific Northwest,

longleaf pine (*Pinus palustris*) forests in the South, and hardwood forests in New England. There is diversity in the ages of a forest stand as well, and this can pose some quandaries. Is there such a thing as a potential old-growth forest, for example, as forests mature over time? Moreover, a definition will need to negotiate points of view as different from one another as extractive capitalism and Traditional Ecological Knowledge, the evolving knowledge acquired by Indigenous people through living in a place for millennia. Important differences exist *within* those worldviews as well. A core tenet of colonialism is the assumption that there is one privileged point of view, one true worldview, and one true religion (or forest management plan). A definition that escapes this assumption will make room for multiple understandings of the nature and worth of a forest.

If a definition refers to the value of a forest, keep in mind that forests have many values. Forests have *instrumental* values, of course: those functions that are valued because they serve human interests. Examples are sequestering carbon, cooling the air, shading salmon streams, and (through debt-for-nature swaps) paying off foreign debts. Not to be overlooked is an important set of instrumental values that we might call "affective" because they affect, or call forth a valued response in, the human heart. These might include feelings of awe, wonder, joy, mystery, kinship, and reverence. Complicating the picture are a forest's intrinsic values – values a forest has apart from its usefulness. These tend to be spiritual, moral, and aesthetic values. A forest doubtless has an ecology of productivity, but it also has an ecology of surprise and wonder, a rambunctious life-urgency, and a life-wisdom that includes instrumental, intrinsic, and affective values. Thus, an enduring definition will acknowledge multiple, complex, and interrelated values.

Be cognizant of the problematic nature of an enduring definition. It's likely that President Biden asked for a definition that "endures", so that the issue does not have to be re-engaged every year, every election cycle, every level of the courts. But it is possible that an "enduring definition" is an oxymoron, a contradiction in terms. Our compressed view of time may allow us to think of forests as unchanging, but on every scale, old forests are in flux, as they face drought, wildfire, flood, "stand-replacement events" like clearcuts, and anthropogenic climate change. The political context of the forest is changing too, as people's views of forests evolve. In some circles, cutting old-growth trees – once an unquestioned practice – is, in the flash of only a few decades, becoming unthinkable. So, a definition of an old-growth forest that is fixed in time, however convenient that may be, is problematic in times of rapid change. Does that mean an enduring definition is impossible? Not necessarily. But it does mean that the process (note that "define" is a verb) will necessarily be characterized by humility, inclusivity, and imagination.

Attend to the nature of the defining process. Just as established uses may play a role in how forests are defined, established decision-making practices may play a role in the practice of defining. A common method of making decisions about forests is the stakeholder method, in which a group of people is assembled, each representing a particular set of interests – banks, landholders, fisherfolk, etc. (although note that the interests of the forest itself are seldom represented). Tribal leaders are often included as stakeholders, although that is a mistake of categorization, given that tribes are sovereign nations. The discussants hash it out, and often the decision favors the person with the most power, loudest voice, or strongest connection to entrenched interests. This is an unpromising way to write a definition (see persuasive definition, above). Here, the character of the people making the definition will be critical to its success. Are they dispassionate – caring, but even-handed? Are they honest? Is their thinking clear and inclusive? Can they imagine themselves in the position of the least powerful?

Be aware of your point of view. For obvious reasons, President Biden did not ask an old-growth forest to define an old-growth forest; forests are generally deemed to be inarticulate – although they communicate with one another, and they are certainly communicating to us in the languages of storm, plague, and fire. But just as it is presumptuous for one person to claim the right to define another, it is presumptuous to ignore the forest's point of view. Humans necessarily bring an anthropocentric perspective to the work of defining old growth. But we are creatures of imagination. With empathy and respect, we may ask: how would an old-growth forest define itself?

President Biden's request for a definition is important beyond words. Because it may quickly become a matter of which forests are preserved, it is quite literally a matter of life and death. And now, when old forests are sequestering substantial quantities of the carbon emitted by the global extractive economy, it might become a matter of the life and death of civilizations. How can we define mature and old-growth forests so empathetically, so expansively, so inclusively, so respectfully, that they – not merely their definition – can endure and by enduring, by breathing in and breathing out, help save us from the worst consequences of our mistakes?