

# Forest structure, services and biodiversity may be lost even as form remains

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A forest may look like a forest, have many of the same trees that used to live there, but still lose the ecological, economic or cultural values that once made it what it was, researchers suggest this week in articles in *Proceeding of the National Academy of Sciences*.

One study outlines services and functions that are disappearing in mountain ash forests in Australia, and a commentary in the journal pointed out that many of the same issues are in play in forests of the Pacific Northwest, the grasslands of the [Great Basin](#), and other areas.

Beneath a veneer of [forest](#) health, dramatic reductions may be taking place in such functions as [carbon sequestration](#), water yields, [wildlife protection](#) and biodiversity of species, said scientists from Oregon State University and the University of Washington.

They called for more attention to natural processes, restoration of the broad range of forest structures needed to maintain the original ecosystem, and reassessments of policies and management practices as needed. In particular, the article questioned any continued harvest in old growth forests and salvage logging after wildfires or wind storms.

"If you just look at a forest, it may look about the same as it used to," said K. Norman Johnson, a distinguished professor of [forest ecosystems and society](#) at OSU. "But we're losing them without really knowing it.

"It's late in the game, and there's no easy way out," Johnson said. "We

need to recognize this, help to better inform the public, and take the steps both with science and policy that may be required."

Traditional practices in forest management for wood production, such as clear-cutting, site preparation and replanting, tend to produce young forests with uniform structures and low diversity. Large, [old trees](#) with cavities, essential to many [wildlife species](#) are often absent. And increasingly, even young but very diverse forest stages are becoming scarce.

"Because the young forests are dominated by the same tree species, how could there be a problem?" the scientists said in the report. "The problem is, of course, that critical forest structures and entire stages in forest development can be effectively eliminated from regional landscapes."

The researchers in these journal articles call this a "landscape trap," a complete shift to new ecological processes that bear little resemblance to those of the past. The dry forests of Eastern Oregon, Johnson said, are a perfect example. Where small fires would once burn frequently and clear out undergrowth but allow large trees to survive, the forests are now crowded, thick with undergrowth, prone to severe fire, re-growth and a repeat of that catastrophic pattern.

Allowing burned forests to recover naturally would be a positive contribution to development of both diverse understories and complex forest structures, the analysis said, even though the full process may take centuries to reach fruition. Recovery in some areas may be much faster than that, depending on the situation, Johnson said, but the conditions of many forests will be difficult from which to recover.

"If irreversible and socially undesirable long-term changes to regional landscapes and societies are potential consequences, major changes in

policies and practices may be appropriate," the scientists concluded.

Provided by Oregon State University

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