

Seeing the definition through the trees: a framework for re-defining forests

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Video Abstract

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Abstract

What exactly is a forest? Most people have a mental picture of what a forest is. But beyond physical appearance are values associated with what this forest provides to people and nature. Depending on your perspective, a forest may be seen as a source of timber, an ecosystem containing important biological diversity, a home for indigenous people, or a sink for carbon. A single, uniform definition of forests is unable to capture these diverse perspectives, and applying only one definition can hinder conservation, management, and restoration efforts. Yet, clear definition criteria are needed for assessing forest loss or gain at large spatial scales. To address this predicament, an international research team discusses historical forest definitions and concepts, and provides guidelines for future researchers and policy makers to navigate the complex landscapes of modern forests. The way forward, they argue, requires multiple definitions designed and applied to specific goals. The most widely used forest definitions today are based on minimum values of land area, tree height, and canopy cover. While useful for general assessment of forests, these broad definitions fail to account for the nuances in social and ecological forest properties, including their origins and future trajectories. Consider a patch of lush, native rainforest. If this forest is cleared and replaced with a eucalyptus, rubber, or oil palm plantation, the same definition of forest applies despite dramatic changes in ecosystem services and socio-economic outcomes. Standardized assessments of total forest cover overlook important features, such as carbon storage, the proportion of native trees, or species used by local people. Definitions that distinguish old-growth forests from recently replanted forests and continuous forests from fragmented forests are important to make sound conservation and restoration decisions that affect human and non-human lives. In a time of unprecedented environmental change, protecting and restoring forests are critical. Developing and applying definitions that incorporate forest dynamics and distinguish between types and trajectories of tree cover will allow us to recognize, assess, and value the various benefits of all forest types, now and in the future.