WILD HERITAGE

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Climate Action Beacon

Logging in primary tropical forests is not sustainable, even with best practices:

This is primarily because big, hardwood species grow slowly and are found at low densities per hectare. As a result, ecological forest recovery times after logging are many times longer than logging rotations allow (typically 25-30 years) as the typical tree age is 200-400 years[i]. Logging therefore rapidly depletes commercially valuable hardwood trees and significantly degrades the forest.

More specifically, the big, tropical hardwood tree species targeted by logging, e.g. mahogany or Ipe:

- Are very slow growing (~1-3mm/yr). Slow growth enables them to develop very dense bark, providing protection against disease, insects etc. and allowing big trees to live for centuries.
- Occur at low densities – there are thousands of small and medium sized trees per hectare, but very few big trees (a few dozen per hectare as a global tropical average).
- Are shade tolerant – they grow underneath the canopy.
- Are critical to the forest's biodiversity and provide habitat for dozens of species.
- Concentrate much of a forest's "above ground carbon" (vegetation, dead wood etc.). Recent studies indicate that 1% of the world's trees concentrate up to 50% of above ground carbon.[ii]
- Continue to sequester carbon throughout their lives and can sequester more carbon later in life. Old trees strengthen forests and are absolutely not obsolete or senescent.[iii]
- Are critical to the structure of a primary forest, creating and maintaining shady, cool and moist habitat conditions for thousands of species, and making the forest far more fire and drought resistant. They are the "backbone" of the forest.
- Are highly sensitive to disturbance. Opening up a tropical primary forest canopy even a little bit (via roads, big tree removal, collateral damage from logging etc.) allows too much light to enter the forest, drying out the forest, making it flammable, and leading to a proliferation of vines and lianas and invasive species. Light from a forest edge created by a road or logging can impact a forest for up to two kilometers.

Research suggests that logging in a way that achieves a sustainable timber supply would require a new Sustainable Forest Management (SFM) protocol that includes: reduced impact logging techniques, cutting cycles of 60 years or more; logging intensities of less than five trees per ha; basal area removal of approximately 15% or less; logging gaps that measure no more than 500 square meters; a minimum felling diameter of 60 cm; retention of seeds trees on the basis of consideration of the specific life history (autecology) of the species being logged; post logging silviculture treatment in logging gaps that includes planting seedlings where trees fail to regenerate, and intensive tending of seedlings until they reach pole size.[iv] The story is far more complex for maintaining biodiversity and ecosystem services and achieving synergistic climate biodiversity outcomes. **Note:** The numbers above reflect global averages, which include significantly higher per hectare timber stocks in Asian tropical forests. Thus, logging intensities would need to be lower in Africa and the Americas.

Such revised logging protocols substantially diminish the amount of timber that can be removed while increasing management and training costs, making logging economically unviable without substantial subsidy.[v] This helps explain why: (a) most tropical logging is illegal and does not even attempt to achieve sustainability, (b) forest is often converted to agriculture after commercially viable timber stocks are locally depleted, and (c) REDD+ failed to slow forest degradation and deforestation. Forest management for commodity production throughout the world remains firmly dominated by conventional approaches.[vi]

A primary tropical forest that has not been degraded by logging protects more biodiversity, stores more carbon per hectare, and stores carbon more securely for the long term because it is more resilient than a degraded forest (or plantation). In addition, primary forests are resistant to fire and regulate water flows more effectively. They are also vitally important to Indigenous peoples and local communities, and are frequently found on Indigenous territories. Thus, the ecosystem integrity of a primary forest, and the complex web of life that underpins it, reduces risks and maximizes vital ecosystem services.[vii]

Given accelerating climate and biodiversity crises, and the inherent limitations of SFM in primary tropical forests as listed above, we urgently need new and innovative funding mechanisms based on rigorous monitoring that provide performance payments for protecting primary forests, restoring ecosystem integrity, and maximizing ecosystem services.

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