A.P.E.S. in Real Life: Reversing the Deforestation of Haiti

Even before the devastating earthquake of 2010, life in Haiti was hard. On the streets of the capital city, Port-au-Prince, people would line up to buy charcoal to cook their meals. According to the United Nations, 76 percent of Haitians lived on less than $2.00 a day. Because other forms of cooking fuel, including oil and propane, were too expensive, people turned to the forests, cutting trees to make charcoal from firewood.

Relying on charcoal for fuel has had a serious impact on the forests of Haiti. In 1923, 60 percent of this mountainous country was covered in forest. However, as the population grew and demand for charcoal increased, the amount of forest shrunk. By 2006, more than 9 million people lived in this small nation, and less than 2 percent of its land remained forested. Today, most trees in Haiti are cut before they grow to more than a few centimeters in diameter. This rate of deforestation is not sustainable for the people or for the forest.

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Deforestation disrupts the ecosystem services that living trees provide. In Chapter 1 we saw some of the consequences of subjecting land to such massive deforestation. When Haitian forests are clear-cut, the land becomes much more susceptible to erosion. When trees are cut, their roots die, and dead tree roots can no longer stabilize the soil. Without roots to anchor it, the soil is eroded away by the heavy rains of tropical storms and hurricanes. Unimpeded by vegetation, the rainwater runs quickly down the mountainsides, dislodging the topsoil that is so important for forest growth. In addition, oversaturation of the soil causes massive mudslides that destroy entire villages.

But the news from Haiti is not all bad. For more than two decades, the U.S. Agency for International Development has funded the planting of 60 million trees there. Unfortunately, the local people can’t afford to let them grow while they are in desperate need of firewood and charcoal. A more successful effort has been the planting of mango trees (*Mangifera indica*). A mature mango tree can provide $70 to $150 worth of mangoes annually. Their value provides an economic incentive for allowing trees to reach maturity. The deforestation problem is also being addressed through efforts to develop alternative fuel sources, such as discarded paper processed into dried cakes that can be burned.

Extensive forest removal is a problem in many developing nations, not just in Haiti. In many places, widespread removal trees on mountains has led to rapid soil erosion and substantial disruptions of the natural cycles of water and soil nutrients, which in turn have led to long-term degradation of the environment. The results not only illustrate the connectedness of ecological systems, but also show how forest ecosystems, like all ecosystems, can be influenced by human decisions.