



DURHAM, North Carolina, August 24, 1999 (ENS) - The delicate ecological web of the tropical rain forest is permanently unraveled by heavy logging, according to the most comprehensive long-term study yet done of the effects of timber-cutting on a rain forest. Although tropical rain forests cover less than 10 percent of Earth's surface, they contain more than 50 percent of all species.

The researcher, Duke University biologist Thomas Struhsaker, concludes that even so-called "sustainable" harvesting practices used in some countries are far too intensive to protect rain forest ecology. He advocates that rain forest preserves be spared completely from logging. And, for rain forests that are to be logged sustainably, harvesting must mimic natural treefalls — consisting of no more than one large tree per hectare per century, done by hand to minimize forest disruption.

The findings describe the results of 23 years of studying the 560 square kilometer (216 square mile) Kibale rain forest in Uganda. The study represents the first time the interrelations of both plants and animals have been incorporated into a long-term study of logging, said Struhsaker.

The Kibale Forest National Park is home to the highest concentration of primates in the world. Eleven different species have been counted here. (Photo courtesy Kilimanjaro Adventure Travel)

"This is a study that really looks at the impact of logging on the wildlife," he said. "Most of the others have looked primarily at commercial timber species, not even considering the rest of the flora."

Such breadth was particularly important in understanding rain forest ecology, Struhsaker said, because in tropical rain forests, animals are more important to the perpetuation of the trees and plants than in temperate forests.

The findings by Struhsaker and his colleagues have been published in a book, "Ecology of an African Rain Forest: Logging in Kibale and the Conflict between Conservation and Exploitation," University of Florida Press, Gainesville, Florida.

"The destruction of these forests is indisputably one of the greatest ecological disasters in the history of Homo sapiens," he said. He estimates that an area of tropical rain forest the size of Greece or the state of Florida is being converted to agriculture each year.

Struhsaker says it is impractical to manage tropical forests to increase timber yield beyond that of a natural forest or even to restore damaged ecosystems - while at the same time maintaining viable populations of plant and animal species found in old-growth forests. Such management is expensive and requires an investment in a project that may not yield returns for 75 to 100 years.

"Far more time, labor and money must be invested in post-logging management in order to achieve adequate forest regeneration than if the damage due to logging had been minimized," he wrote. In any case, such management is likely to fail, given the complexity of the forest ecosystem and the fact that loggers invariably push to maximize short-term profits.

In general, these systems are so complicated, and there's so much natural variation in them, that you cannot separate the impact of the harvest from the natural variation until often 20 years or more after the fact. In the meantime, you've likely made some wrong management decisions."

Struhsaker's observations of rain forest logging worldwide lead him to believe that logging will accelerate, and with it the loss of tropical rain forest.

"As timber resources around the world become depleted, more and more species that are not considered valuable today will become valuable tomorrow, and will be logged, he said. What's more, he said, timber companies will move into new areas of untouched forest.

"Already, we know that the big timber companies in Indonesia and Malaysia are moving to South America. They've finished the resources in Southeast Asia and now they're moving on."

Struhsaker's experience has convinced him that the only long-term solution to conserve forests in developing countries is population control, energy conservation to reduce wood use and strong forest management policies by stable governments. Developed nations, the principal market for tropical woods, must reduce their rates of consumption of natural resources.

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