

# Protection and Preservation: The Challenges

International concern for forest protection is growing, but at the same time the world's forests are being destroyed at a rate of about 100,000 acres (or 150 square miles) per day. In 2019 tropical forests cover about 7.7 million square miles, an area roughly equal to the size of the entire United States land mass plus China. This represents around 13% of the world's land surface. For perspective, forests historically covered 30% of the planet's land area.

In lowland Guatemala, our tropical forest restoration program is expanding and centered primarily in the region around Lake Peten-itsa in the Peten District. Before we plant trees, we secure a commitment that the local community will preserve and protect whatever trees we plant for at least as long as they live, ideally in perpetuity.

This region's recent history is filled with outside financial interests coming into their area to cut their forests and run off with the profits without benefit to local residents. As a result this is one of the most plundered and overcut regions in Central America. Thus our efforts to help restore their forests has been welcomed and received with appreciation and thanks. However, if one looks at the forces looming on the horizon, there are longterm economic and social issues to consider.

We face the challenge of protecting the existing rainforest in an area surrounded by poor villages, farmers and semi-rural citizens. This means that we face a limit on how much forest we can close off as parks and untouchable reserves. Over the next few years we must initiate concern for an improved quality of life and economic opportunities for local residents. Presently the people in the Peten are mostly poor, with many earning only a few dollars per day. Nevertheless, they remain some of the happiest people in the world.

As background, the local residents are almost entirely K'iche' Mayan whose ancestors built the great ancient Mayan cities of Tikal, Caracol, Xunantunich, Uaxactun and Copan. What is significant for our reforestation is that these Mayan people retain in their oral history the story of the abrupt fall of Tikal. Around the year 900, Tikal, was the largest Indigenous city in the Americas. It collapsed because the people overcut the rainforest. This dried out the local micro-climate which in turn caused crop failures and starvation. More than 100,000 of its



residents starved or migrated into the forest. The survivors retained knowledge of their once great city. Today they still recognize how they inadvertently caused the collapse of their civilization. This awareness today provides an incentive to restore the forests. In the photo above, you can see one of the many pyramids in the ruins of Tikal that still dot the land around this once great Native metropolis.

This ancestral knowledge encourages their forest restoration efforts. Economic forces are simultaneously at work in the background. This should caution us to limit how far we proceed with new forests as we also need to improve the health and vitality of the local economy. To maintain longevity in this work, we must ensure that our reforestation efforts generate sufficient economic incentives to maintain continued reforestation. Rainforests will survive as functional ecosystems only if they can provide tangible economic benefits to the local residents. Additionally the regional government must also find sufficient benefits to justify the maintaining of forest reserves and the forgoing of revenue from economic activities within the boundaries of these protected areas.

The local Peten government in Flores will need to see a balance between well-being of its rural poor and the expansion of its forests, and perhaps some loss of revenue from cattle grazing. A longterm plan is necessary that grows the rainforest and at the same time grows the social and economic wellbeing of the community. This means our tree planting vision must reach simultaneously in two directions: toward reforestation and social regeneration. If we can do both, our efforts will be successful and perhaps even a model for sustainable economic and ecological sustainable development. Success in conserving wildlands will require reconciling the conflict between short-term needs of residents and the long-term benefits that forest conservation can generate on an ongoing basis.



In this photo from May, 2018, Jose shows how much this tropical mahogany tree has grown from our first reforestation efforts for a local park in 2008. This tree is now over ten years old and pushing the forest canopy higher and higher. It is also helping to create more humid and moist conditions. This sturdy and rapidly growing tree now hosts the bird species, insects and flowering fruits which can further the regeneration of this regenerating forest.

To ensure the protection of park or forest reserves like this, we must be aware that rainforests are cut mostly for economic reasons. Sometimes in Guatemala, deforestation is caused by poor farmers simply trying to squeeze out a living on marginally fertile lands.



Beyond conversion for subsistence agriculture, activities like logging, cattle pasture clearing, and peasant farming are sizable contributors to deforestation. In this area agricultural fires are typically used for land-clearing to support subsistence farming. Our tree planting must return a benefit to these people as well as those of us who seek to hold off climate change by sequestering our carbon dioxide far from their origin.



Here on the left this is a photo of mature rainforest. Notice the thick concentration of trees, plants and foliage generally. This type of forest has perhaps the highest density of biodiversity on the planet. This forest hides an abundance of birds, insects, reptiles and animals plus it retains a much higher moisture level than the secondary forest immediately above. The forest photo above is still reaching toward what is called its climax stage of botanical development.

This mature forest is a carbon sponge. Even as secondary forest, meaning in recovery toward a mature forest, analysis by forest scientists shows that tropical secondary forests have enormous potential for removing carbon from the atmosphere. The net carbon uptake for these secondary forests is 8 to 11 times that of old-growth forests in other areas.

The welcome sign on the right announces a new forest reserve which was established in 2017. Forest reserves such as this one provide a simple form of protection. In order for this forest reserve to survive into the distant future, the underlying social, economic, and political reasons for deforestation must be anticipated and addressed. It may be that multi-use reserves that promote development and education of local people is a good place to start.

