

## Conserving Biodiversity

### Impact of Ancient Mayan Gardening on Biodiversity in Belize

The Maya culture flourished for at least 3000 years. At its peak, the Maya empire spanned Mesoamerica and featured large, densely populated cities filled with massive stone monuments. This vast civilization was supported by a sophisticated agricultural system, an important component of which was the forest garden. Built around Maya homes, the tree-dominated gardens mimicked the natural forest structure and provided food, medicine, and other resources.

For millennia, the Maya managed their forest gardens intensively, practicing sustainable agriculture while changing the composition of tree species in the forest. With their long experience in managing forests, ancient Maya forest gardeners probably recognized and exploited synergistic relationships between species—that is, the beneficial effects that some species exert on each other. This synergism may have helped the forest gardens remain stable over very long periods.

By the time the Spanish arrived in Mesoamerica in the 16<sup>th</sup> century, the Maya empire had collapsed. Its urban centers were long abandoned, and its ancient forest gardens were long untended. The Spanish found the remnants of the empire in villages filled with trees, the homes surrounded by numerous species that continued to be used for daily household needs.

This project investigates whether the effects of ancient Maya forest gardens can still be observed in



**Nanci Ross rests by a fiddlewood tree.**

Modern Maya use its wood for musical instruments, its bark for treating diabetes and anemia, and its beautiful blue flowers for religious ceremonies.

the contemporary forest, especially in the composition and diversity of its trees. It also considers the role that synergistic relationships between species might have played in the continued impact of these ancient forest gardens.

The multidisciplinary approach combines both quantitative ecological methods and a qualitative anthropological approach.

In its ecological focus, the research examines the diversity and abundance of key indicator species, trees known to have been used by the ancient Maya. It also considers the effects of soil characteristics, such as soil texture, drainage, slope, and fertility, on tree species.

In its anthropological focus, the project explores ecological awareness among modern Maya forest gardeners—especially their understanding of the interactions among tree species.

The results of this research may be used to develop new conservation programs for forest gardens that respect and draw on the expertise of contemporary Mayan gardeners.

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