

Belize's Maya Forest: Regenerative agriculture, protection, and restoration



With the support of the *Five Great Forests of Mesoamerica project*—a regional initiative for climate, biodiversity, and people funded by the European Union—communities, local organizations, and institutions in Belize’s Maya Forest Corridor are working together to sustain the connectivity of the Maya Forest, in the face of threats such as wildfires, land-use change, and agricultural expansion.



[Watch the video!](#)

A key corridor within the Maya Forest

The Maya Forest, recently recognized by the governments of Guatemala, Belize, and Mexico as the Great Maya Forest Biocultural Corridor through the Calakmul Declaration (2025), spans approximately 5.7 million hectares and constitutes the largest continuous tropical forest in Meso-

america. This system integrates protected areas, community territories, private lands, and productive landscapes, whose connectivity is essential for both biodiversity and people.

In Belize, this connectivity is maintained through the Maya Forest Corridor, a strategic landscape that links the forests of the Maya Mountains in southern Belize with the broader trinational Maya Forest to the north. The Wildlife Conservation Society (WCS) and its partners focus their efforts on supporting communities, national institutions, and local organizations to reduce pressures, restore degraded areas, and strengthen land management within this critical landscape.

The Human Footprint analysis coordinated by WCS shows that the Maya Forest has experienced one of the largest increases in human pressure in Mesoamerica. Between 2000 and 2015, the extent of areas with lower human influence declined by 33%, from approximately 55,000 km² to just over 41,000 km².

Selva Maya Forest loss 2001 - 2024

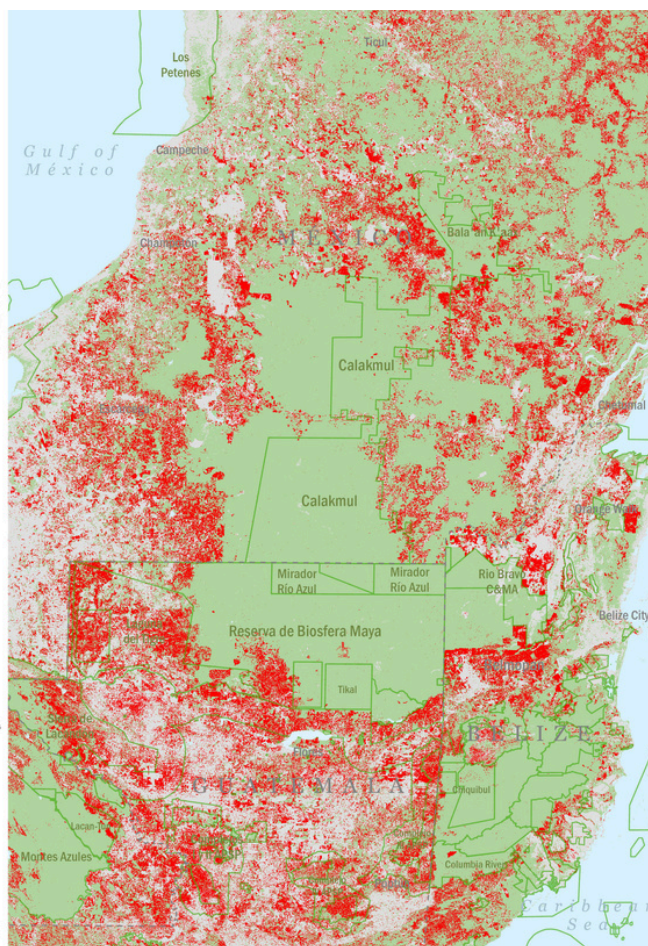
Hansen et al, 2013



Protected areas
Forest change
Hansen et al 2013
Forest in 2024
Non forest
Water
Forest loss 2001-2024



Wildlife Conservation Society



Map by WCS Mesoamerica.

In Belize, these pressures are expressed most clearly through wildfires and the recurrent use of fire. Satellite data from the VIIRS sensor—used to detect hotspots associated with active fires and

burning—show a significant increase in recent years, particularly in 2023 and 2024, indicating growing pressure on the forest. This is compounded by annual forest cover loss, which in Belize exceeded 27,000 hectares in 2024, mainly associated with fires, land clearing, and land-use change.

Restoring the landscape by reducing pressures

The central strategy of the intervention by WCS and its partners has been Assisted Natural Regeneration, which combines territorial protection, fire management, and community-based monitoring to create the conditions necessary for the recovery of native vegetation.

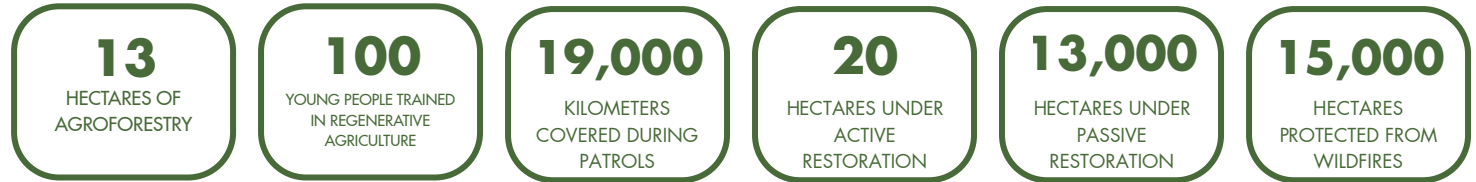
Through this approach, more than 13,000 hectares of forest now have improved ecological conditions. By reducing pressures such as illegal logging, hunting, and recurrent fires, natural ecosystem processes are restored, allowing native species to return without direct intervention.

In highly degraded areas, this process has been complemented by active restoration actions across 20 hectares. Small clusters of fast-growing native trees adapted to open, sun-exposed conditions were planted, helping to restore vegetation cover, improve soil conditions, and create shelter for birds and other seed-dispersing animals. Over time, these vegetation islands facilitate the continuous recovery of the forest.



Left: Distribution of plants and supplies to regenerative agriculture pilot farms. Right: Hubert Pasqual and Marcella Williams, farmer from St. Paul's and member of the Community Baboon Sanctuary. Photos by Conway Young.

To sustain these efforts, local nurseries have been strengthened to support restoration processes and community-based production systems, linking forest recovery directly to everyday land management and local livelihoods.



Some notable results in Belize's Maya Forest, within the framework of the Five Great Forests of Mesoamerica.

Community Baboon Sanctuary: women, forest and river

In the Belize River Valley, the Community Baboon Sanctuary Women's Conservation Group (CBSWCG) has managed a unique conservation model since 1998. Through voluntary agreements with private landowners, communities protect riparian forests that sustain the black howler monkey and many other species associated with these ecosystems.

For Marcella Williams, a farmer from St. Paul's, this commitment is deeply personal:

"My father was one of the first farmers to sign the pledge to protect part of his farm for wildlife. For us, caring for the forest has always been part of how we live and produce."

Jessie Young, president of the group, explains it from daily experience:

"We always lived with the monkeys. They were not a threat. What we needed was to organize ourselves to protect what already existed."

With project support, the CBSWCG strengthened its organizational and technical capacities while advancing concrete actions in riparian restoration and regenerative agriculture. As a result, three hectares of degraded riparian forest were restored.

A community nursery, located at the Bermudian Landing Visitor Center, supports restoration processes and local production systems. Beyond supplying plants, this space has become a learning hub where farmers strengthen their knowledge of sustainable management and tree propagation.



A community nursery producing native tree seedlings, which are distributed to local farmers to support restoration and reforestation efforts within the Community Baboon Sanctuary. Photo by Community Baboon Sanctuary

Protecting the corridor: patrols, fire, and community response

The Maya Forest Corridor is particularly vulnerable to human-caused wildfires, one of the main threats to the Maya Forest in Belize. To address this risk, local communities, WCS, and the Maya Forest Corridor Fire Working Group (MFCFWG) have strengthened an integrated approach to fire management and territorial protection. Through these efforts, more than 15,000 hectares of forest have been protected from wildfires, reducing damage to forest cover, biodiversity, and community livelihoods.

As part of this work, rangers conduct systematic patrols using the SMART monitoring tool, maintaining a constant presence in the territory, detecting threats, and documenting illegal activities. More than 370 patrols were carried out, covering nearly 19,000 kilometers across the Maya Forest Corridor and strategically important connectivity zones within Belize's Maya Forest.

This ground-based work is complemented by drone monitoring, which expands surveillance capacity at the landscape scale. In 2025, aerial monitoring flights were conducted primarily for early fire detection, fire response support, and monitoring of other threats. During the dry season, this tool has been critical for identifying fire outbreaks, understanding fire behavior, and guiding ground response.

Despite these efforts, wildfires remain a challenge. During the most recent dry season, eight fire incidents were documented, three of which directly affected corridor areas—highlighting the



Community fire management in action within the Maya Forest Corridor, where trained local brigades respond to wildfires to protect forests, biodiversity, and community livelihoods. Photos by WCS Belize.

continued importance of prevention and community-based fire management. WCS, MFCFWG and communities are training together in wildland fire management to increase efficiency and effectiveness during fire suppression efforts.

In communities such as Mahogany Heights, strengthened fire management has made a tangible difference. Raquel Vega, a community leader, summarizes it clearly:

“Before, we depended on someone coming from outside to help us when there was a fire, and many times it was too late. Now we are trained, we know what to do, and we react quickly.”

Training, equipment, and local organization have helped protect homes, crops, and forest areas in a context where fires are becoming more frequent due to climate change. Beyond suppressing fires, this work has strengthened community capacity to care for their territory and respond effectively to one of the greatest threats to the Maya Forest.

Producing without pressuring the forest

Reducing pressure on the forest also means providing viable productive alternatives. In communities surrounding the Maya Forest Corridor, the project has supported farming families in transitioning toward more sustainable practices.

For Densdale Thompson, a farmer at Double Head Cabbage, this change was also a change of outlook:

“We used to think shade was a problem. We thought we wouldn’t produce anything if we left trees on the farm.”

Through training in regenerative agriculture and silvopastoral systems, he began to integrate fruit and forage trees into productive areas, using shade to conserve moisture, improve the soil, and reduce the need for external inputs.

“We now understand that shade protects the soil, that leaves serve as cover, and that not everything has to be burned as it used to be.”

Like him, 13 households in communities in the corridor receive continuous technical support to diversify their production, improve soil management and reduce dependence on practices that put pressure on the forest. Agroforestry systems, home gardens and improvements in silvopastoral systems have strengthened food security and local incomes.

Producing without pressuring the forest

At Belize Rural High School, agriculture is taught with hands in the soil. With project support, a cover structure was built that now functions as a living laboratory for 100 students. Hubert Pasqual, the agriculture teacher at the school, explains:

“Here, the soil is basically silica. If we plant directly, nothing grows. Students learn that first you have to understand the soil, improve it, and work with it.”

Inside the cover structure, students grow vegetables such as tomatoes and cabbage, observe germination rates, measure plant growth, and compare results between protected and open-field crops. Part of the harvest supports the school feeding program, while the rest is sold locally.



A covered structure at Belize Rural High School used as a hands-on learning space, where students planted and harvested their first crops, including cabbage and tomatoes. Photos by Conway Young.

A corridor cared for from within

The experience of the Maya Forest Corridor shows that conservation does not happen only within protected areas, but across living landscapes. From students and farmers to community brigades and local leaders, actions in Belize demonstrate that caring for the forest and sustaining livelihoods strengthen one another when built from within communities.

As Jessie Young summarizes:

*“People want to do the right thing.
They just need the tools, the knowledge, and the support to do it.”*



Text by Claudia Novelo Alpuche / WCS Mesoamerica with support from WCS Belize. This publication has been co-financed by the European Union. Its contents are the sole responsibility of the authors and do not necessarily reflect the views of the European Union.