

BELIZE PROJECT: EXECUTIVE SUMMARY

Conservation of Mahogany phenotypes and testing of forest enrichment techniques in North-eastern Belize



Belize has long been known for its Mahogany, but due to large scale extraction in the 18th and 19th century all very large Mahoganies trees were harvested. Although having virtually depleted the country of its valuable hardwood, the British did nevertheless set up a network of forest reserves, many of which still exist today. In the northern half of the country the Freshwater Creek Forest Reserve (FCFR) was created in the late 1920s. Originally covering approximately 30,000 hectares, it was gradually reduced over time to approximately 16,000 hectares.

In 2012, the **Government of Belize** and the **NGO Corozal Sustainable Future Initiative (CSFI)** entered into an agreement for the co-management of the FCFR. In 2014, through its Swiss partner the International **Tropical Conservation Fund (ITCF)**, CSFI sought support from and entered a partnership with the **Precious Forests Foundation** to start activities pertaining to sustainable forest management at Freshwater Creek. A conservation and enrichment programme for hardwoods, with a primary focus on Mahogany was initiated since the forests within FCFR had been very heavily depleted by legal and illegal logging over the past decades. **Two main core missions** were in focus

- Gaining a better understanding of FCFR's forests by establishing numerous Permanent Sample Plots
- Setting up a trial for the enrichment of Mahogany within standing forests (nursery



For the enrichment a gap-planting system was used and the project has shown that the **enrichment** of gaps within natural forests with locally produced **Mahogany trees is possible**, through to at least young regenerating forest stages. Mortality was at acceptable levels and growth increment proved satisfactorily, but mostly so in gaps of at least 400 m², with a relatively low degree of canopy cover (< 25%). The project also showed that a **proper tending of forests is necessary**, at least in the early years, in order to achieve silvicultural goals in terms of growth, quality, vitality and stability. A certain degree of competition, after the initial growth stage, was shown to clearly increase growth rates in Mahoganies. Had this project not been implemented, the critical situation around the Mahogany phenotypes specific to the **forests of Freshwater Creek may not have come into light**.

Based on the experience gained over the past seven years, **CSFI aims at continuing and/or developing the following activities:**

- Continue the follow-up all gap plantations, with continued measurement of planted Mahoganies and investigate the feasibility of developing a gap-enrichment programme in sensitive border areas
- Conduct enrichment planting in any future gaps opened following natural events, fires or illegal clearings and gather Mahogany seeds from areas newly added
- Follow the evolution of all Permanent Sample Plots to check on both growth and species composition.
- Keep nursery active at all times, with various phenotypic lines separated.
- Develop a Mahogany planting scheme with local schools and village authorities, since the species is the national tree of Belize. This will also help increase the amount of available mother trees in the region.

The support by the Precious Forests Foundation helped CSFI better understand the forests it protects. It also laid bare **how urgent this research was**, in view of the dramatic depletion of local Mahogany phenotypes in the Freshwater Creek area. Finally, the practical experience in gathering seeds, the production of seedlings, the planting and maintenance of young mahoganies in the field and last but not least the choice of suitable gaps, have all been thoroughly documented. This will not only help CSFI's teams but may also **prove to be very valuable to other forest areas that have, for the most part, also been depleted**.

Zurich, 24.02.2022