

Annual Report by the US for Belize Foundation for Research and Environmental Education (BFREE) on the Belize Cacao-based Agroforestry Restoration Program (BCARP) February 15, 2016

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Project Description:

BCARP is a six-year project spear-headed by the U.S. non-profit, US for Belize Foundation for Research and Environmental Education (BFREE), to convert degraded land to cacao-based agroforestry for the purpose of expanding migratory bird habitat in the Trio Agricultural Community, Toledo District, Belize, Central America. This program was initiated in October 2012 with funding from the U.S. Department of the Interior, Fish and Wildlife Service, on behalf of the Nyanza Natural Resource Damage Trustee Council – comprised of the Service, Commonwealth of Massachusetts and National Oceanic and Atmospheric Administration.

Trio borders BFREE reserve land on the eastern side. Approximately half of the residents of this community are Maya and the other half are Spanish-speaking immigrant farmers primarily from Guatemala and Honduras and, in small part El Salvador, who were granted 30-acre plots of land in 2007. Farms in this area include citrus, pineapple, plantain, corn, and cattle. Some of the land has yet to be converted farmland and is second-growth forest.

Project Activities:

Monitoring

Annual monitoring activities took place on two farm plots and three comparison plots in November and December 2015. Point counts and mist-netting/mark-recapture were implemented on each site to determine resident and migratory species utilizing the plots. The comparison plots included a citrus farm, a pineapple farm and a cattle farm

Farmer Meetings

- Jacob Marlin, BFREE Executive Director, and BFREE staff held three farmer meetings during 2015 (January 28, July 5, and September 2) to discuss progress on existing farms, answer questions, and trouble shoot issues. Sapling die off was a major topic of discussion during two of these meetings.
- Two emergency meetings took place in May to address the burning of one farmer's (Omar Alfredo Allala) acreage. Approximately, 2.5 acres of the five acres dedicated to cacao were burned in the night. Damage was assessed and coffee seeds were provided to Mr. Allala for immediate replanting.

Permanent Nursery

Construction began on a 40'x50' permanent tree nursery located along the Southern Highway halfway between BFREE and Trio Agricultural Community. The nursery will hold cacao and coffee seedlings as well as timber species that can be inter-planted to create diverse agroforests.

Coffee Nurseries

Five nurseries were established for coffee saplings during the fall 2015. All five are near the homes of BCARP farmers. Coffee trees will be inter-planted with cacao in areas where plants were lost either due to stem borers or as a result of drought. BCARP funds covered the labor required to build the nurseries, including the multi-day activities of collecting the soil for bags, small trees for posts, and palm fronds for thatched roofing.

Trainings

A half-day hands-on training was offered for BCARP farmers led by BFREE Cacao Farm Manager, Elmer Tzalam on January 28. The focus was managing shade for the maturing cacao saplings. Discussion included types of trees to remove and percentage of shade needed for different sized cacao trees followed by demonstration of best practices for tree and shrub removal.

Outreach

- During August and September 2015, BFREE staff visited community centers and schools in Toledo District of southern Belize to describe current conservation initiatives including cacao-based agroforestry projects like BCARP. During this program, BFREE also premiered the new film "Wings of Hope," a documentary chronicling the re-discovery of a population of wild Harpy Eagles in the Maya Mountains of southern Belize and promoting the conservation and protection of Belizean wildlife and wilderness areas. Over 1,100 adults and children were reached by these efforts.
- Pen Pal letter exchanges continue between Golden Stream Government School in Golden Stream, Belize and Canterbury Elementary School in Canterbury, New Hampshire. 6th grade Language Arts students from Whitwell Elementary School in Whitwell, TN were added to the exchange during the fall of 2015. Over 100 students in grades 4, 5 and 6 exchanged letters on the themes of birds, culture, holidays, and family. During their December exchange, each classroom viewed the new BFREE film, "Wings of Hope," and incorporated the film into one of their exchanges.

Cacao Agroforestry Handbook

Progress continued on BFREE's Cacao Agroforestry Handbook. This illustration-heavy handbook is written in English with Spanish translations and was designed for farmers with no or limited literacy. Currently, the handbook is undergoing final edit and will be distributed to farmers throughout southern Belize during 2016.

Land Dedicated to Cacao

Total land dedicated to cacao-based agroforestry reached 52 acres and total cacao trees planted since the project inception is over 30,000. Two farmers have begun integrating coffee and plantain in their understory as well.

Evaluation Conducted

UF Law Student, Gregory Toth, visited BFREE and Trio to conduct an internal evaluation of the BCARP project to date. The resulting report is entitled: "BFREE'S Belize Cacao-based Agroforestry Restoration Project: Evaluation of Current Status and Recommendations: A Report Detailing the Impacts of Payments for Ecosystem Services to Smallholder Farmers in Southern Belize, Results to date of the program and potential paths forward."

Project Challenges

- **Sapling die off** was a major problem during the dry season (late spring to early summer) in 2014 and 2015. Approximately 40- 50% was lost during 2014 – this loss was immediately followed by replanting. Another 50% of the total number of trees was lost in 2015. Coffee was replanted instead of cacao in the fall of 2015 in an attempt to diversify the crops and to allow farmers to work with a crop that they are familiar with. Causes of the die off could have been caused by several variables, including: rough handling when transplanted from the nursery to the farm, agricultural pests like stem borers, and a long dry season in 2015. We are currently researching the die off and will adapt our efforts based on our findings.
- **Loss of crops due to fire** – One farm was burned intentionally overnight when the BCARP farmer was away from the land. The majority of his cacao trees were destroyed leaving approximately 300 plants. The farmer was disheartened yet wanted to continue the project and requested significant investment from BCARP to do so. BFREE agreed to pay for replacement seeds and offered some labor support.
- **Limited funding to replace tree loss** – Within our overall budget we did not include significant funds for replacing trees lost during the first years therefore we have had to redirect some money from other areas to deal with loss and in the case of the farm lost to fire, we were not able to replace at the scale of initial planting because there was simply no budget for this.