

**Annual Report by the US for Belize Foundation for Research and Environmental Education (BFREE) on the Belize Cacao-based Agroforestry Restoration Program (BCARP) March 20, 2014**

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**Background:**

BCARP is a five-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. Residents of this community are primarily Spanish-speaking immigrant farmers from Guatemala, El Salvador, and Honduras who were each granted 30-acres of land in 2007. Farms in this area include citrus, pineapple, plantain, corn, and cattle. Some of the land has yet to be converted and is second-growth forest.

**Project Activities:**

- BFREE Executive Director, Jacob Marlin, and BFREE Avian Program Coordinator, William Garcia, held ten plus stakeholder meetings in the Trio community during 2011 and 2012 to determine interest, develop contracts, and to initiate the project. Site visits followed the meetings to determine whether the plots were suitable for shade-grown cacao. Farmers that were selected were invited to participate based on this process.
- In conjunction with the University of Florida's, Levin College of Law, Conservation Law Clinic, contracts were developed both in English and Spanish. Two Law students under the guidance of the Director of the Law clinic worked closely with BFREE staff to develop these contracts. Multiple meetings took place in Trio Village with interested farmers to review the language of the contracts and to answer any questions during the contract development process.
- Baseline monitoring activities took place on two plots in November 2012 and the third in March 2013. Point counts and mist-netting and bird banding were implemented on each site to determine resident and migratory species utilizing the plots. Twenty-six species were Neotropical migrants and sixty-five were residents. NMBs included: Yellow Breasted Chat, White Eyed Vireo, Ovenbird, Wood Thrush, Kentucky Warbler, and American Redstart
- Three farmers provided proof of leases and signed 5-year contracts committing to convert twenty-six acres of forest. Contracts were signed and payments for environmental services began on February 28, 2013. These payments continued every

four months since that time. The three original farmers that signed the contracts are being paid an amount \$200 per acre per year.

- Nine community members from Trio Agricultural Community including the Village Chairman participated in two visits to the BFREE field station during 2012 and 2013. Community members arrived each day by 8am after the six-mile walk to arrive at BFREE. This was the first exposure for these individuals to agroforestry and for most was their first visit into the rainforest. Each person expressed delight at this unusual type of farm and were especially excited to see the unique birds in the cacao and monkeys in the canopy above.
- Three training workshops were held for 21 farmers and day laborers between December 2012 and August 2013. Topics included: An Introduction to Cacao-based Agroforestry – from farm to market; Creating and Maintaining Healthy Cacao Plants; and Best Practices for Planting Cacao with Recommendations for Inter-plantings.
- Materials for nursery construction were purchased in January 2013 and the community nursery was built during early February 2013 in a centralized location behind one of the farmer's homes. Seeds originating from the BFREE cacao farm were germinated and planted in the Trio nursery in mid-February. The nursery became a collaborative project established, developed and maintained by BFREE and the BCARP farmers, their families, and neighbors.
- Eleven students and five faculty members from the University of Florida participated in an afternoon environmental education program that took place at the nursery in Trio. A description of the project was delivered to the group. Three participating farmers and two interested villagers were present at the educational activity.
- Seventeen day laborers were hired to transport and plant the cacao seedlings in the three participating farms. These laborers and the BCARP farmers participated in a mandatory training prior to beginning their work. Over 10,000 trees were planted between August 15 and September 5, 2013.
- Five additional farmers have submitted leases and are willing to commit 5 acres each to the project even without the promise of payment for environmental services. These farmers were offered the opportunity to participate in 2014 training and receive some support in the form of seedlings and advice. A waiting list of additional farmers has been started and continues to grow.

#### **Additional Results:**

- After participating in a BFREE field course focused on “Sustainable Development: Law, Policy and Practice,” University of Florida, Master's student in Sustainable Development Practice, Gentry Mander, completed a 3-month practicum with BFREE. During the summer of 2013, Ms. Mander reviewed the cacao industry in Belize and created the associated “Cacao Value Chain Analysis in Toledo District, Belize.”
- Cacao Farm Manager, Elmer Tzalam, and UF Graduate Student, Gentry Mander, participated in the first Cacao Forum in Belize. This forum took place on June 19, 2013 and was organized by the Ministry of Natural Resources and Agriculture (MNRA)

together with the Inter-American Institute for Cooperation on Agriculture (IICA), the US Embassy and the Caribbean Agricultural and Research Development Institute (CARDI).

- In collaboration with the University of North Carolina, Wilmington, a pilot research program has been developed to look at how target species of migratory and resident birds utilize cacao versus forest. In 2013, BFREE in conjunction with UNCW, York University and the Biodiversity Research Institute (BRI), submitted a Neotropical Migratory Bird Conservation Act grant to further develop this research project “Increasing the number of Neotropical Migratory Birds in the Flyway: a shade-cacao restoration model for Belize”.
- York University of Canada developed a study abroad field course “Tropical Ecology” to be implemented in 2014. The course focuses on determining the health of migratory birds in agro-forested areas around BFREE containing cacao and coffee versus intact forest.
- BFREE and UNC Wilmington submitted grants to support the development of a cacao-based agroforestry curriculum for our environmental education programs offered in buffer community primary schools.