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TCD Field Research Grant Report
Thesis title: Outlook for Brazil nut (*Bertholletia excelsa*) in a changing climate

Abstract

With the help of the TCD Field Research Grant, I traveled to Acre, Brazil for my thesis research on *Bertholletia excelsa* demography. I collected data from trees in Chico Mendes Extractive Reserve in collaboration with the Corporation for Agricultural Research (EMBRAPA). I also had other professional and informal learning opportunities to complement my graduate education.

Background

The focus of my thesis research is demographic analysis of *B. excelsa* trees on one landholding in Acre, Brazil. This analysis will result in an estimate of the population growth rate, what influence fruit extraction has on regeneration, and what influence climate change may have on population viability. The types of demographic analysis I will perform require measurements of the same individuals across several years. For this reason, the data I am using come from Colocação Rio de Janeiro, Seringal Filipinas, Chico Mendes Extractive Reserve in the state of Acre, Brazil. Dr. Karen Kainer and Dr. Lúcia Wadt established a *B. excelsa* longitudinal study there in 2001 and 2002. They and their colleagues and students have studied numerous aspects of *B. excelsa* since then, which makes it an ideal source of information for demographic analysis using models.

Data collection

The fieldwork conducted during my visit in Summer 2015 contributes information about growth and survival of the *B. excelsa* trees identified in 2001 and 2002. We recorded which trees were still surviving and which had died, the diameter at breast height (dbh) of each, crown characteristics, fruit production status, and whether vines were present. The fieldwork was conducted during two weeks: the first in June with Aldeci da Silva Oliveira, EMBRAPA field technician, and the second in July with Aldeci, Dr. Kainer, and Dr. Christina Staudhammer (University of Alabama).

Related activities

I spent a significant portion of my time in Acre learning from scientists and other students at EMBRAPA in Rio Branco. I participated in a week-long training course on geographic information processing for forest management activities (MODEFLORA) facilitated by EMBRAPA. I improved both my technical skills and Portuguese language skills specific to the forestry profession during the course. Aside from the course, I learned about Brazilian forestry and associated research from visits to experimental plantations and conversations with colleagues. I presented the results of my preliminary analysis performed using data collected before the 2015 field season to the forest research team at EMBRAPA. They gave me valuable suggestions that I will incorporate into my final analysis.

Cultural enrichment

My trip helped me develop professionally and personally by meeting and socializing with Brazilians both in the city of Rio Branco and in Chico Mendes Extractive Reserve. I gained a deeper understanding of Brazilian culture in general, and of the modern extractive community which still depends heavily on forest resources. My conversational Portuguese language skills greatly improved, which will be an advantage for me in the future when seeking opportunities for employment or collaboration in Latin America, or when learning other Romance languages.

I greatly appreciate the opportunity that the TCD program, its donors, and the grant selection committee has given me to travel to Acre as part of my thesis research. It was a unique and crucial part of my experience as a graduate student.