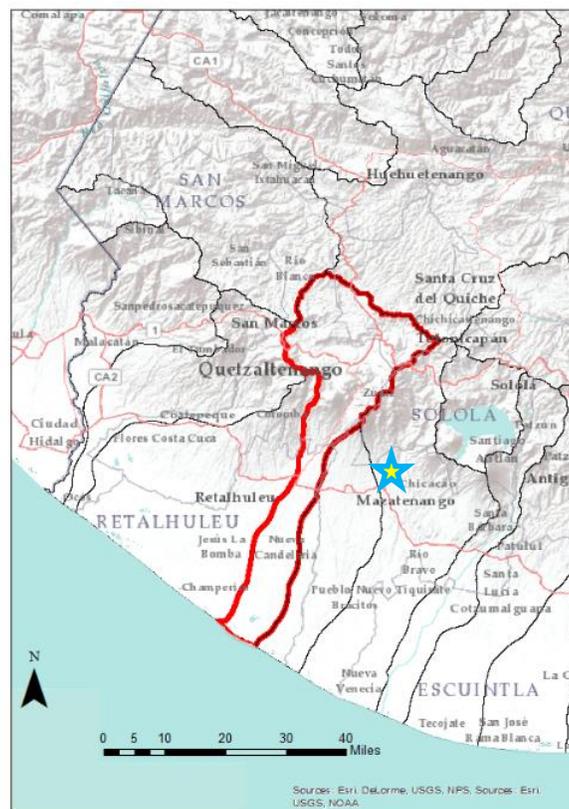


# Climate Change and Coffee Adaptation: Developing Dendroclimatological Records In the Southern Volcanic Chain of Guatemala.

## CLAG Field Study Awards 2015. Report of fieldwork activities. Diego Pons

Following my stated objectives, I spend about two months in Guatemala for the purpose of collecting dendrochronological samples from the southern slopes of Guatemala's volcanic chain. I visited the forest known as "Kanchej" located in Cantel, Quetzaltenango ( $14^{\circ}46'21.47''N$   $91^{\circ}26'35.56''W$ ) at 10,200 ft. Several samples were collected during an intense fieldtrip to these Guatemalan highlands within the Samalá River upper watershed (figure 1).



**Figure 1.** Site of collection of dendrochronological samples at the Samalá River watershed (red) .

Samples have been mounted and sanded already (figure 2) and are ready for the analysis process as stated in the proposed timeline. In this case, a student who has worked with dendrochronology samples was invited to be part of the team to collect and mount the samples. All this preparation of the samples was actually performed at the Del Valle University in Guatemala because there were other students interested on learning the process. Therefore, I decided the samples could be prepared there to help improve the knowledge of students at the university and let them get familiar with paleoclimatological techniques.



**Figure 2.** Dendrochronological samples obtained with support of the CLAG fieldtrip award.

Following the proposed schedule, during the rest of this October the cores will be measured to 0.001mm precision. Cross-dating will be assessed and verified using the program COFECHA and, depending on the length of years on the samples, I will then, detrend the measured rings accordingly and create a master chronology using Arstan software. Calibration of the chronology will be evaluated against yearly and monthly rainfall, obtained from local meteorological data from the official weather Institute (INSIVUMEH) and by the network of National Coffee Association (ANACAFE). If this initial sampling and subsequent data analysis proves successful, that is, *Abies guatemalensis* reliably reflects precipitation regimes of the southern volcanic slopes of Guatemala, I will then return to collect more samples from the same and similar sites. Both the flight ticket and the *per diem* for 2 people for two weeks was covered by the grant, the rest was spend on equipment as stated.

Thanks CLAG for the opportunity of improving my fieldtrip collections!