

Project Update: March 2014

During November-December 2013 we did a 3-week field trip to measure vegetation at all ranches. To do so we had the help of Julie Pawels, a French student of agronomy who worked as a field assistant. The measures consisted of six transects of 2 x 10m at each site, where each plant species cover was registered, together with the type of canopy and type of soil cover. Within those transects we also counted the numbers of seedlings, saplings (two age classes) and adults of the main canopy species (*Austrocedrus chilensis* and *Nothofagus dombeyi*). This was done for the 20 study sites, 10 of low and 10 of high silvo-pastoral use. A complete herbarium was done including all plant species of the sites, and now we are under the process of identification. Once all plant species are identified, the material is going to be kept at the Ruiz Leal Herbarium (IADIZA, Mendoza).

During February-March 2014 we did a 2-week field trip to measure plant functional traits related to palatability, and decomposition and biomass production processes. A field assistant from Universidad Nacional de Cuyo, Florencia Alvarez, helped with the work. We collected fresh leaves of the most abundant plant species of each site (based on the information that we collected of vegetation cover) for nitrogen and carbon concentration analysis, and to calculate the specific leaf area index (a commonly used index of the relationship between area and dry matter content). We also collected aboveground green biomass (up to 1 m height) in four 0.5 x 0.5 quadrants, and estimated the degree of soil compaction. This was done in the 20 study sites. Finally, we collected half of the litter-bags of the decomposition experiment that started in May 2013.

We discussed with each ranch owner about current production activities in regards of their perception of livestock effect on soil and vegetation. After that we told them about the relationship between biodiversity and ecosystem services, and asked them about their perception of the ecosystem services that the forest produces without management and under silvo-pastoral management (as done in May 2013). Then we discussed the potential effects of livestock on those ecosystem services. The objective of these talks was to understand their perception about the problem of landuse intensification, but from the ecosystem service approach. We expect that this helps in regards of the understanding of the results of this project.

Currently we are processing the data collected in the field, in order to start the analysis of biodiversity effect on ecosystem processes and services.

Next Expected Activities

The final field trip is going to be held in May 2014, in order to collect the rest of the litter bags. During the next months we are going to process all collected data and analyse it in order to assess the relationship between biodiversity, ecosystem processes and services in this ranches and the potential trade-offs and synergies under landuse intensification (increasing grazing

intensity and selective logging). We expect to give to the ranch owners a final report of the project by August 2014.