Project Update: November 2018

Objectives:

- Defining and selection of the sites corresponding to the states and transitions (S&TM) – 100% complete - I have completed all participatory workshops for discussion and consensus with experts from Tierra del Fuego for selection and definition of the sites corresponding to the states and transitions.

- 2-Microclimate characterisation - 100% complete - Data collection fully completed. A total of 200 sampling areas were characterised during 2016 and 2017. We have gathered enough microclimatic and species data (understorey plants and insects) for the four states defined in 2016 (and more than 150 sub-states) in *N. antarctica* forests to defined the biodiversity responses to the differential impact of livestock management.

- 3-Statistical procedures - 100% complete - Statistical procedures (e.g., multivariate analyses) were published in a high-impact scientific journal (Forest Ecology and Management, please see Huertas Herrera et al. 2018. For. Ecol. Manage. 430:380-393) and in my doctoral thesis (presented in August 2018, but not defended yet). In both publications, I acknowledged The Rufford Foundation for providing financial support to my work. Notably, I will soon publish another paper with project data; I will thank to Rufford.

- 4-Conservation and public education- 100% complete - Training classes for rural communities were completed. We worked with resource managers and policymakers in two workshops at the main cities of Tierra del Fuego (Ushuaia and Rio Grande).

Outcomes:

As presented in 2017 inform, the three most important outcomes were:

Scientific training: The assemblages of biodiversity (plants and insects) of the understory in grazed ñirantales (bovine vs. sheep) were different from the vegetation of the nearby grasslands. This suggests that cattle grazing influenced on plant composition both in the forest and open lands, being stronger the differences in open lands than in the forest. In addition, significant differences between the types of livestock were detected, where an important trend of presences of alien species was related more to sheep than cattle.

Scientific knowledge: Together with livestock differential impacts, I found unique plant and insect assemblages along three different zones of ñire forests of Tierra del Fuego. This means that several different species communities exist along with ñire forests with the same structure. Thus, diversity values are not visible as a group of trees, and the success on biodiversity conservation management of these forests will depend on the action at a smaller scale since biodiversity differs within a region (three different zones) and management unit (e.g., livestock grazing) within a ranch.

Conservation and public education: Once more, I engaged technical advisors in the project objectives. My work aims to establish a way to produce a unified

classification of forest units (or types) to address and guide future field studies in ñire forests (e.g., conservation). Moreover, some results of this work (e.g., different state and transitions defined) have been used by resource managers and policymakers (e.g., National Institute of Agricultural Technology and the Austral Center of Scientific Investigations) to establish minimum guidelines for the presentation of silvopastoral management plans in forests of ñire in the province of Tierra del Fuego.

Involvement & Benefits:

Engage local social actors

I have conducted discussions with stakeholders in Ushuaia and Rio Grande through participatory workshops. Activities have included guests, Dr Guillermo Martinez Pastur and Dra Rosina Soler from Laboratory of Agroforestry Resources (CADIC-CONICET).

In addition, the results of the project were presented at an important scientific event in Tierra del Fuego, between August and September 2018 in Ushuaia city, called "Semana Nacional de la Ciencia y la Tecnología" (or science's week), where I showed the importance of the nature conservation, ecosystem services and biodiversity of *Nothofagus* forests to more than 10 schools of Tierra del Fuego; children and teenagers (~8-15 years old), and even adults. The contribution in the community was fantastic since there were many questions from the public, being the teaching space to the people convincing.

Publicity:

Yes, the RF logo (and/or acknowledgments) has been used between 2016 and 2018 in:

Conservation and public education

- Poster and Powerpoint presentation for workshops at Ushuaia and Rio Grande.

Scientific training

- T-shirts for the research team during the fieldwork in 2017.

Scientific knowledge

- Long-term ecological research: 200 new semi-permanent plots were added to PEBANPA network for future ecological studies.

Scientific training

- Doctoral thesis and scientific and informative publications.

Conservation and public education

- Governmental institutions
- Nature conservation short films (e.g., YouTube, Facebook)

Personal communication

- Students and colleagues.

Future:

Yes, I am editing a short film that shows pristine and impacted *Nothofagus* forests and associated ecosystems. The goal is not only to rescue the beauty of the landscapes of Tierra del Fuego but also highlight the importance for the conservation of the biodiversity they harbour. Many of the images were taken with a drone. I hope to finish it in summer 2019.

Personally, I hope to continue working in the forests of *Nothofagus* with forest social actors in Tierra del Fuego (e.g., livestock and forestry producers).

To do a policy enhancement and a long-lasting impact of this project, we (the team) have plans to include our project into a new binational group between Argentina and Chile, the Observation Group of Southern Patagonia focused on agreeing on scientific research criteria applicable to the societies in these countries. I think this will be an important step to promote the conservation of native forests through land planning, sustainable management and tightening of the regulations associated with land-use change.

Conservation training instances for children in CADIC science´s week_A

Conservation training instances for children in CADIC science´s week_B