



Prevention, rehabilitation and education of areas affected by the 2017 fire – Peralillo 2018.

Report 1

General objective: To establish a demonstration plot, conduct a farm-level diagnosis and through discussion will propose early actions and management to mitigate the effects of fire and increase productivity post-fire disturbance in the O'Higgins región.

Objective 1: To develop protocols for the management of areas dedicated to agroforestry and the rehabilitation of sites with native species affected by fires, with a focus on prevention.

Activities.

Definition of the needs for the project.

After we receive the funds, there was a number of meetings to organize the team and define key aspects of the project. The final team have the direct participation of the academics Rafael Larraín and Daniel Enríquez, who are experts in pastures management for land restoration, and Marcelo Miranda, who is expert in Geomatics and identifying land potential and forests management plans.

In addition, we count with Agustina Hidalgo as our field coordinator. She is an Agronomist with wide experience in environmental impact assessment projects, production of nurseries of native plants, training of project participants and coordination of ecological restoration plans, tree planting and she was born in the zone, so she knows well the main social actors involved. Agustina is going to lead the work with the local community.

The project also counts with volunteers as Mara Gálvez, Biologist and M. Cs who is supporting the project with aspects related with soil and plant rehabilitation, she would also work on the School, and Benedicte Penicaud, student on double degree program, who is working on the digital information available to build up the maps of the zone affected.

Location.

We decide to work with the County of Peralillo, deeply damaged after the wildfire, with 56% of the economic activity concentrated on agriculture and 14.2% of the population living in poverty.

The main economic activities here are based on crops, fruits and vineyards, natural pastures for sheep and cattle, and exploitation of wood plantations. There is also native vegetation concentrated on hills around the County.

In order to develop protocols for the management of areas dedicated to agroforestry, the team decided to look for a representative site of the main activities developed in Peralillo, with an organization that could help the development and support of the project.

With this criteria on mind, we made contact with “Fundo el Olivar, sociedad Agrícola y Ganadera”, located on the county, with a mix of productive land and native vegetation with some cattle and a paddock of 30 Ha. All this native vegetation burned in fires on 2017.

Diagnosis.

Part of the team visited twice “El Olivar”, to start the diagnosis. Photo N°1 shows a panoramic view of the hills, burned after the fire.



Photo N°1. Panoramic view of the hills on “El Olivar”

The next photo shows the limits of “El Olivar” from upside, all red is the burn.



Photo N°2.



Photo N°3

There was an important damage on different species of our native flora. On Photo N°3 is *Puya coerulea*, species with regrowth capacity. In this case did not succeed.



Photo N°4

In this case regrowth of *Quillaja saponaria*, Quillay. On the back, one specimen of *Lithraea caustica*, Litre, dead because of the fire.

Part of the diagnosis is to characterize all the levels of damage and then analyze the data captured directly on the site with information available from remote systems, in order to organize the actions in four levels:

- Recognition of physical and biotic factors (baseline)
- Inventory of vegetation, flora and soil resources
- Actions for the conservation and recovery of soil and vegetation
- Environmental monitoring program

We will continue working on this during the rest of July and August.

In terms of decrease wildfire risks, our team proposed a system based on the use of cattle to create a firewall on the south part of the site, where the fire started.

This solution integrates the use of animals in agroforestry as a mechanism to protect and restore the land, with natural meadow recovery, increasing water retention, and is based on the use of a fence to move the animals in a controlled space, that allow keeping the wild grass short enough to make the firewall.

Photo N°5 shows the design of this firewall of 6.4 Has.



Photo N°5.

Objective 2: To develop and put in place an educational and self-management programme in order to raise local awareness of the damage caused by fires, and mitigate their effects on productive and natural systems.

Activities.

The School selected for the educational programme is “Escuela Sara Ravello”, a rural school, with 30 students of the first educational level. It is located in Peralillo County, on “Rinconada de Molineros”. This rural school counts with some greenhouse infrastructure (12x20m) able to carry out the activities.

Other rural schools near, Rinconada de Peralillo with 13 students and Calleuque with 12, are going to join us.

We discuss their needs and main interests with the director and team of teachers, and we agreed this topics on 5 sessions starting on August:

- a) Soil management and preparation
- b) Composting and worm use
- c) Propagation of medicinal herbs and native plants
- d) Biodiversity / environmental awareness and sustainable management

The activities are going to be focus on the children and team of teachers, but also open to the families and neighbors.

We are discussing the possibility of holding a scientific fair in conjunction with the “Violeta Parra” School in the urban center of Peralillo. On this fair, we would like to have the participation of a number of students of our Faculty, who are very interested on this Project.

Comments

At this point, the project is well on track with good perspectives and a committed team. This second semester will concentrate many activities, so we will be very carefull on planning the logistics and collect all the data, and aware of different needs that can emerge from the community involved.

All the work with the schools and the plot results will be included on the manual with protocols and recommendations.

As it is planned, the project ends with a seminar with the community and local public entities. This Seminar will include a visit to the managed demonstration plots, and discussions on preventive work and early fire management techniques.

With this design, we hope to impact positively on this County, implementing simple integrative solutions for the community.