

Project Update: March 2019

Report of first and second stage (developed during March 2018-February 2019):

1. Location of sampling sites

Within the polygonal in Los Ocotones, Chiapas, we selected 12 sampling sites in areas with forest management and unmanaged areas as control treatments. A history of the use of the areas was recorded at each selected site.

2. Location of sensors and registration microclimatic variables

Data of temperature and relative humidity are obtained from seven sensors, every hour. These are saved in database every three months.

3. Choice of host trees

In each sampling site, corresponding to silvicultural treatments and forest without any type of management. In each site three circular plots of 0.1 ha were established. Five *Quercus* trees were selected in each plot (12 sites X 3 plots X 5 tree hosts). In total are 180 tree hosts. We find five host species of *Quercus*: *Q. peduncularis*, *Q. calophylla*, *Q. glaucescens*, *Q. sapotifolia* and *Q. elliptica*.

4. Determination of forest structure and ecological parameters

In each site the composition and floristic structure of the forest were measured to obtain the importance value index (IVI): density (trees/ha), basal area (dominance) and frequency. We measured 3488 trees of species of *Pinus*, *Quercus*, *Vaccinium*, *Nectandra*, mainly. We measured the vegetal coverage in 36 plots.

5. Sampling

Epiphytes

We reported 58 species of vascular epiphytes in general, and their dry weight (g) in each tree host. The most families are Orchidaceae, Bromeliaceae, and Pteridophyta. The conserved site have most species of vascular epiphytes (48 species). The treatment sites have most species of bromeliads, *Tillandsia* especially.

Mushrooms

Since the completion of the field work, numerous results have been obtained regarding the measurement of structural variables in the forest, valuable information has been generated to carry out prudent analyzes and to recognise at the first hand the physical effects that could be related to the production and the richness of species of Ectomycorrhizal macromycetes, some of which have great value as edible and useful species. On the other hand, the relationship with the people who work within the sites as well as the owners of the land has been very cordial and enjoyable, the idea of collaborating later under other projects once the present study will be completed has been emerged.

So far a number of at least 70 species of ectomycorrhizal fungi is estimated to the region, of which at least four could have a value of edible importance. The formal identification of the species is still tentative due to the fact that a more specialised process is required for its determination, so a list of fungal species will not be presented until formal identification has been made.

6. Publish of the information

Epiphytes and mushrooms

At this moment we are waiting for the next sampling period, we continue with the analysis of the information collected last year, so that the following year we can publish a scientific article that summarizes the most important achievements of the work.

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The results of the analyses are encouraging since, as we had considered from the beginning, the information of the community of ectomycorrhizal fungi is directly related to the intensity of timber harvesting, which gives us guidelines to be able to continue with our premise to consider the forest management as the main causal agent of the presence of certain species not found in a forest which is not intervened. Considering the extraction of timber as the main engine to encourage the production of edible fungi that ultimately could be used in the future by the owners and residents, but a work of this nature on the productive capacity of the region requires a long term study.

During this period it has been possible to carry out the survey of the information thanks to the payment to the technicians who have not only helped the collection of the fungi and other data in the field but also to the identification of the plants that serve as hosts to the fungi as well as to other plants that are part of the same natural habitat, the list of species of collected and identified plants is listed below, which are under guard within the Herbarium of the El Colegio de la Frontera Sur, San Cristobal de las Casas, Chiapas, Mexico.

Actinidiaceae	<i>Saurauia oreophila</i> Hemsl.
Adoxaceae	<i>Viburnum jucundum</i> C.V.Morton
Altingiaceae	<i>Liquidambar styraciflua</i> L.
Aquifoliaceae	<i>Ilex</i> sp.
Araliaceae	<i>Dendropanax arboreus</i> (L.) Decne. & Planch.
	<i>Oreopanax capitatus</i> (Jacq.) Decne. & Planch.
	<i>Oreopanax liebmannii</i> Marchal
	<i>Oreopanax xalapensis</i> (Kunth) Decne. & Planch.
Cannabaceae	<i>Trema micrantha</i> (L.) Blume
Chloranthaceae	<i>Hedyosmum mexicanum</i> C.Cordem.
Clethraceae	<i>Clethra suaveolens</i> Turcz.
Clusiaceae	<i>Clusia</i> aff. <i>salvinii</i> Donn.Sm.
Compositae	<i>Senecio cobanensis</i> J.M.Coult.
Cornaceae	<i>Vernonanthura patens</i> (Kunth) H.Rob.
	<i>Cornus disciflora</i> Moc. & Sessé ex DC.
Fagaceae	<i>Quercus candicans</i> Née
	<i>Quercus sapotifolia</i> Liebm.
	<i>Quercus segoviensis</i> Liebm.
Leguminosae	<i>Inga oerstediana</i> Benth.
Magnoliaceae	<i>Magnolia faustomirandae</i> A. Vázquez
Malvaceae	<i>Heliocarpus donnellsmithii</i> Rose
Nyssaceae	<i>Nyssa sylvatica</i> Marshall
Primulaceae	<i>Myrsine coriacea</i> (Sw.) R.Br. ex Roem. & Schult.
	<i>Parathesis chiapensis</i> Fernald.
Rhamnaceae	<i>Frangula capreifolia</i> (Schltdl.) Grubov
Rosaceae	<i>Prunus serotina</i> Ehrh.
Salicaceae	<i>Xylosma</i> sp.

Despite the great information collected, it is necessary to advance in the sampling effort to be able to consider a completeness of the fungal inventory, so during this year the process of collecting and registering fungal specimens will continue, coupled with the placement of the data logger sensors that were obtained thanks to the support for the purchase of field material, which are added in the photograph.

Some of the drawbacks we had when carrying out the work, are the constant blockades of roads carried out by the residents, in the form of demonstrations against the government or internal problems in the region, which has made occasions to postpone the scheduled dates due to the impossibility of accessing to the sites. Despite this situation, there have not been major problems and the work has been developed in a timely manner.

At this moment we are waiting for the next sampling period, we continue with the analysis of the information collected last year, so that the following year we can publish a scientific article that summarizes the most important achievements of the work.





