SLAM TRAPS – PRELIMINARY RESULTS

Introduction

We started an unprecedented collaboration with several Azorean environmental organizations In Azores to perform a Long Term Ecological Study in the natural forest of several Azorean islands.

This study aims to monitor the flying insect fauna and to monitor the impact of climatic changes in the productivity of Azorean native forests. For that we setup SLAM traps (see Figure1) in the following areas: Pico Alto at St. Maria island; Graminhais, Tronqueira and Furnas at S. Miguel Island; Galhardo, Caldeira St. Bárbara, Terra-Brava and Rocha do Chambre at Terceira Island; Caldeira, Cabeço do Fogo and Pedro Miguel at Faial island; Caveiro, Lagoa do Caiado and Mistério da Prainha at Pico island; Cardeira Funda & Rasa e Morro Alto at Flores Island and Caldeirinha Pero Botelho and Caldeira at Graciosa.

The traps in Terceira are already operating since 2012 with the filed work started in June 2012. In the other islands the study started in August-September 2013. This study is possible due to an unprecedented collaboration with the Natural Parks of Santa Maria, Terceira, Faial, Pico, Graciosa and Flores, the Botanical Garden of Faial, the Furnas Monitoring and Research Centre and SPEA- Azores.

Figure 1 – SLAM Trap located in Caldeira do Faial in Faial Island.

RESULTS AND INTRODUCTION

Table 1. Ranking of the Plots based in the indicator Ratio Endemic species / Introduced Species for Summer 2013.

Season	Island	Sites	Altitude	S Total	S Endemic	S Native	S Indigenous	S Introduced	Ratio End/Intr	Ratio Ind/Intr
Summer 2013	TER	Lomba	693,32	32	15	15	30	2	7,50	15,00
Summer 2013	TER	Lagoinha B	748,09	24	12	10	22	2	6,00	11,00
Summer 2013	TER	Terra Brava -B	667,71	31	17	11	28	3	5,67	9,33
Summer 2013	TER	Lagoa Pinheiro B	930,00	24	15	6	21	3	5,00	7,00
Autumn 2013	PIC	Caveiro Base	940,00	28	15	10	25	3	5,00	8,33
Summer 2013	TER	Caldeira St Bárbara	890,00	20	9	9	18	2	4,50	9,00
Summer 2013	TER	Chambre A	574,57	35	18	13	31	4	4,50	7,75
Autumn 2013	FLO	Ribeira do Cascalho	650,50	10	4	5	9	1	4,00	9,00
Summer 2013	TER	Terra Brava -A	639,31	37	16	16	32	5	3,20	6,40
Autumn 2013	SMG	Graminhais	910,32	19	9	7	16	3	3,00	5,33
Autumn 2013	PIC	Lagoa Caiado - Euphorbias	816,55	23	12	7	19	4	3,00	4,75
Autumn 2013	FAI	Caldeira	819,39	31	15	11	26	5	3,00	5,20
Summer 2013	TER	Galhardo	650,59	35	15	13	28	7	2,14	4,00
Summer 2013	TER	Pico Alto Nascente	686,20	30	12	12	24	6	2,00	4,00
Summer 2013	TER	Labaçal -Morro Assombrado	693,74	34	13	14	27	7	1,86	3,86
Autumn 2013	PIC	Chão Verde inferior	477,98	30	9	16	25	5	1,80	5,00
Autumn 2013	FLO	Caldeira Funda	540	26	8	12	20	6	1,33	3,33
Autumn 2013	SMG	Miradouro da Tronqueira	645,92	24	7	11	18	6	1,17	3,00
Autumn 2013	FAI	Cabeço Fogo	437,08	36	9	16	25	11	0,82	2,27
Autumn 2013	FAI	Pedro Miguel	370,00	49	8	26	34	15	0,53	2,27
Autumn 2013	SMG	Parque Furnas	500,00	55	11	17	28	27	0,41	1,04

1) All the five evaluated islands have sites with high values of the indicator Ratio “endemic species / introduced species” (see Table 1).

2) Remarkabel the hig values of the index Ratio “endemic species / introduced species” for Serra de St. Bárbara sites (Lomba, Lagoinha B, Lagoa Pinheiro B, Caldeira), Chambre anf Terra-Brava (Terra-Brava B) in Terceira island, the original NETBIOME plots;

3) The best areas in the other islands are: Caveiro; Lagoa do Caiado (Pico); Ribeira do Cascalho no Morro Alto (Flores), Graminhais (S. Miguel) and Caldeira (Faial)

4) The index Ratio “endemic species / introduced species” increases with altitude (Fig. 2), which implies that most pristine plots are at higher altitude;

5) The effort in the environmental restoration of Pedro Miguel (Faial) zone was extremely positive because about 34 species of indigenous arthropods Azores occur there, more than in the Cabeço Fogo (25) and Caldeira (24) values on the same island

6) The effort in the environmental restoration of the Parque das Furnas (Sãoo Miguel) zone was extremely positive because about 28 species of indigenous arthropods Azores occur there, superior to other study sites in S. Miguel.

7) The high penetration of alien species in Pedro Miguel (Faial) and Furnas (São Miguel) is due to the fact that these areas are surrounded by non-native habitats.

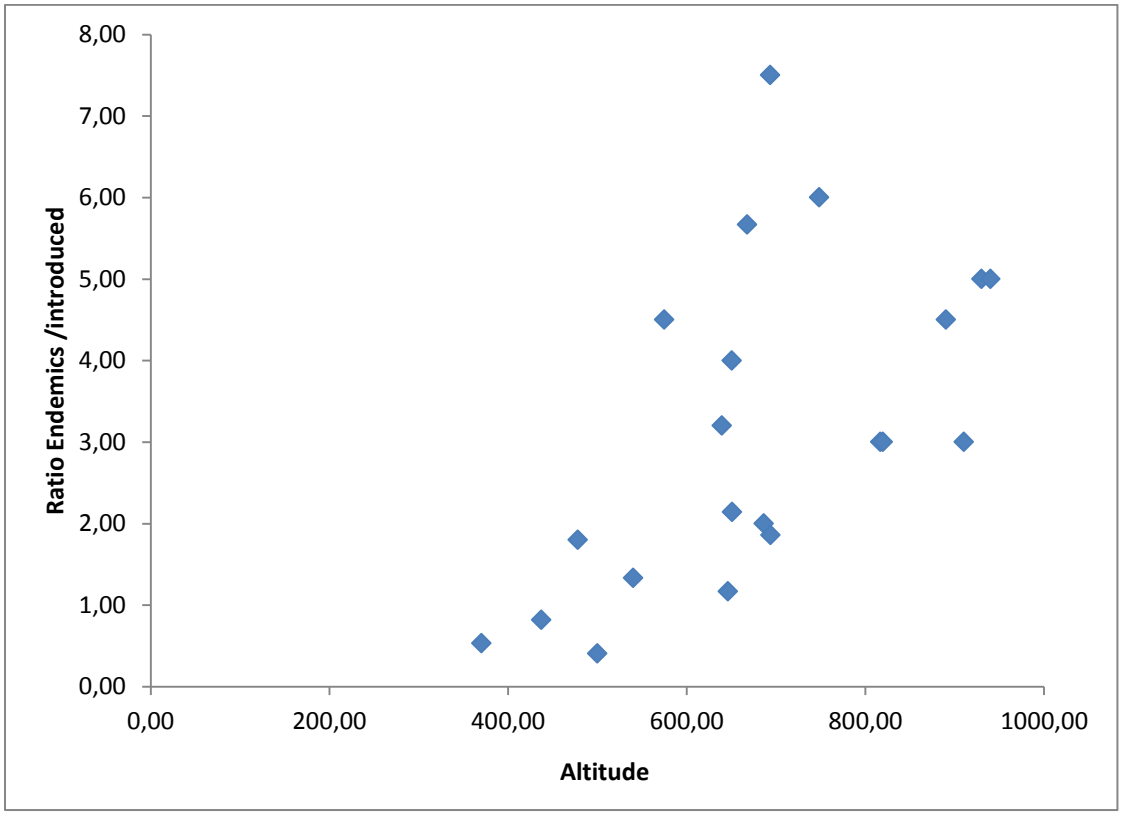

Figure 2. Relationship between the Ratio number of endemic species /number of introduced species.

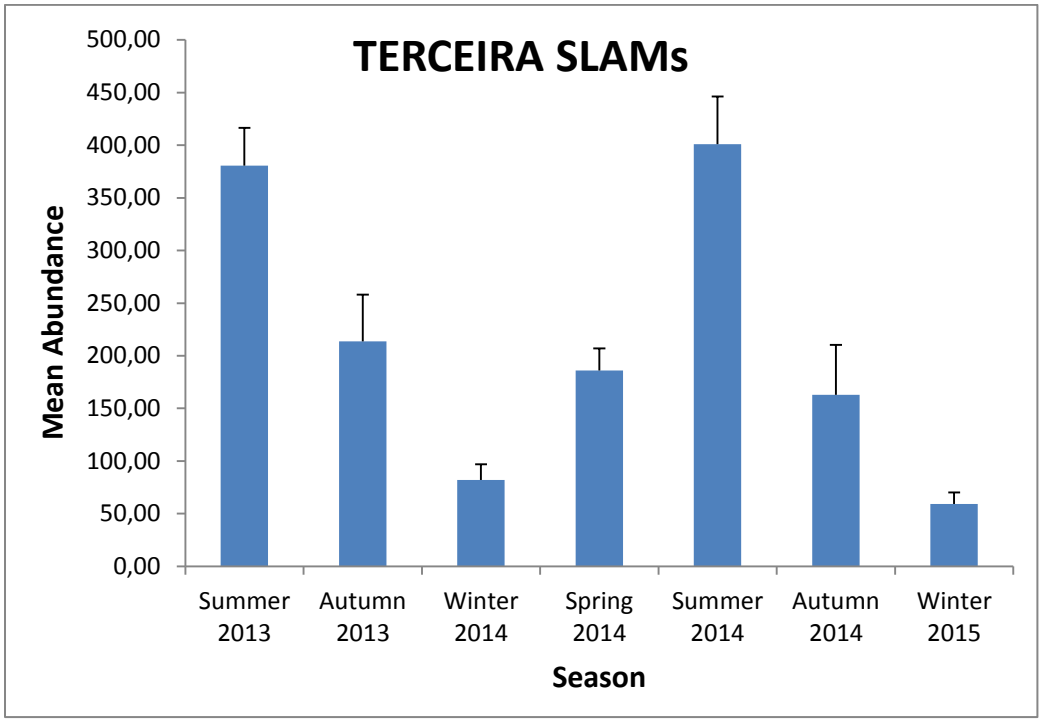

Figure 3. Seasonal and between year variation in the abundance of arthropods in the 10 SLAM traps of Terceira ISland

The first evaluation of seasonal and between year variation in the abundance of arthropods in Terceira island shows that there was no variation between the years of 2013 and 2014 in all the studied seasons, which is a remarkable result (See Fig. 3).