Net-Biome project: Island Biodiversity: Protocol for vegetation plots

JMFP & RO

Ten non-random located (avoiding any human signals, such as roads, paths, etc.) **50 x 50 m (area = 1/4 ha) square permanent plots**, marked with four iron bars (white painted) in each of their corners and one additional iron bar (red painted) in the middle of the plot, should be installed in well preserved cloud forest protected areas (permissions will be needed!), that should cover as much natural variation (windward vs. leeward slopes, wet vs. dry locations, altitude, etc.) as possible. On each corner a nested square subplot of 5 x 5 m should be delimited.

We should previously prepare a field-work sheet where all the data to be gathered in the plot can be filled properly. The field work sheet should include a space for the plot reference and abiotic data, including:

a) Plot name
b) Plot number
c) Survey date
d) UTM (or geographical) Coordinates (using GPS) at each corner or center?
e) Altitude (m) at each corner or center?
f) Aspect (0-360º)
g) Prevalent wind exposition (windward vs. leeward)
h) Inclination (º) at each corner or center?
i) Substrate typology
j) Soil typology
k) Signals of human activity
l) Other observations

Within the large plot, different measurements have to be made:

a) **Canopy height** (m), defined as the mean value of the canopy after taking five punctual measurements in each of the plot corners and in the plot

centre. For its estimation we can use either instruments (such as a Blumeleizer) or made it visually.

b) **Basal area** [m^2 wood at breast height, (aprox. 1.30 m)] of each individual tree. Results can be expressed as m^2/ha, for each species present and for the whole forest community. We estimate visually diameter at breast height (DBH) for each tree with DBH > 10 cm identifying the species and marking it later with a spot of degradable green paint (to avoid double measuring) at the breast height at the north facing side of its trunk. If branched below breast height, all shots should be measured, being total individual basal area the sum of the individual shots basal areas.

c) **Floristic list** of all the vascular plant species (ferns + phanerogams) within the plot. The floristic list should be prepared parallel to the basal area determination. If necessary, additional time should be spend to complete the floristic list, check special microsites.

d) **Leaf sampling** for the genetic analyses, where three shadow leaves (one leaf individual up to three individuals per species present in the plot) are needed. It is important to avoid sampling different shots of the same individual, thus it would be straightforward to sample distant individuals. Leaves of the same species should be immediately stored in plastic bags filled with silica gel to be provide by Juli. Each plastic bag should thus include three leaves per species per plot and a label indicating the species sampled, the plot number and the sampling date. Juli will provide a specific sampling protocol. Minimum weight for very small leaves?

Within each of the corner subplots:

a) **Density of shots** per species (which may be or may be not independent individuals) with a DBH > 1 cm, expressed as the mean number (of four measurements, one per subplot) of shots per species per hectare.