



# FunDivEUROPE

Functional significance of forest biodiversity in Europe

Project number: 265171

## Tree community composition, diversity and regeneration

FunDivEUROPE (FP7) field protocol

V1.0

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## **1 Introduction**

This task provides the central tree-species based metrics of forest biodiversity that will be used to disentangle the relationship between forest diversity and ecosystem functions and services. It will thus deliver the values of the “x-axis”, or the predictive variables, for the graphical and statistical analyses of the Biodiversity-Ecosystem-Function (BDEF)-relationship. It will also provide the link between diversity and regeneration, that is, the connections between current and future forests and how this relationship is affected by the functional properties of existing forests.

## **2 Scope and application**

The data generated by this task will be relevant for the whole FunDivEUROPE consortium.

## **3 Objectives**

The objectives of this task are:

- To obtain the x-axis for the analysis of the functional implications of diversity;
- To explore regeneration potential as a function of diversity and climate;
- To establish quantitative relationships between forest diversity and structure with their potential for regeneration.

## **4 Location of measurements and sampling**

### **4.1 Field sampling design**

The study of tree diversity will include the whole plot. Regeneration of trees will be mapped on a 5 x 5 m subplot placed in the centre of the plot. It will be subdivided in 1 m x 1 m grid cells (Fig. 1).

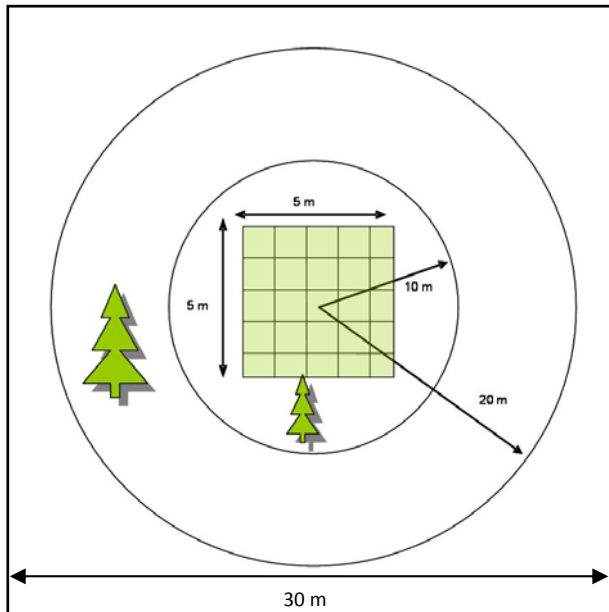


Figure 1: Subplot design for regeneration.

#### 4.2 Sampling scheme

Diversity will be determined as soon as the plots are selected and it is part of the plot characterization process (Plot characterization protocol Exploratory Platform).

Regeneration will be mapped in summer 2012 and 2013. No individuals will be marked unless local teams can assure the follow up of the individuals (survival and/or growth).

#### 4.3 Sampling equipment:

Measuring tape, ruler

#### 4.4 Frequency of sampling:

Sampling will take place only once per plot.

### 5 Measurements

**Diversity:** each site manager will determine the tree species list in each plot and for each species the total number of adult trees. Adult trees are those  $> 7.5$  cm of DBH (for fast growing species in dense plots) or  $> 1.3$  m in height (for slow growing species particularly in low density plots).

**Regeneration:** the CSIC team together with local staff will identify all woody juveniles and count them, measure their height to the top of the crown (natural position of the plant, without extending manually any of the branches etc.) and the extension growth (main shoot,

or if damaged or eaten an alternative shoot or stem) of previous year and of current year (measurements will be done when vegetative growth is mostly stopped). By juveniles we understand all woody plants < 1.3 meters high.