

### **Agenda**

<b>20 July</b>	- ...	Arrivals and reception
	17.00 – 20.00:	Presentation of the Field Course
<b>21 July</b>	8.30-12.00:	Field exercises and data entry
	12.00-13.00:	packed lunch
	13.00-19.30:	Field exercises and data entry
<b>22 July</b>	8.00-13.00:	Field exercises and data entry
	13.00-14.00:	packed lunch
	14.30-16.30:	Field exercises and data entry
	16.30-... :	Excursion and social dinner
<b>23 July</b>	8.00-12.00:	Meeting GV: Preliminary discussion on some field results, Questionnaire results, Guidelines to implement 1 <sup>st</sup> and 2 <sup>d</sup> phase at Country level, Discussion further QA/QC activities
	12.30-... :	Conclusion, greetings and departures
<b>Evening workshops:</b>		some presentation on the Quality Assurance experiences at Country level are foreseen (20'), with short discussion

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## Introduction

Action C1-GV-15(IT) and field exercise contribute to overall FutMon project aims (creation of a pan-European forest monitoring system which can serve as a basis for the provision of policy relevant information on forests in the European Union).

### **FutMon Objectives** (among others)

- building of capacities for the coordination of harmonised forest monitoring
- collection of quantitative and qualitative forest data related to (...) biodiversity
- contribution of information needed for sustainable forest management (data related to the improved pan-European Indicators for Sustainable Forest Management)
- scientific analysis of data and provision of respective reports focusing on forest conditions and forest soil conditions in relation to (...) biodiversity
- provision of a forest monitoring system in Europe, serving as the plot basis for other monitoring programmes aimed specifically at biodiversity and climate change.

### **FutMon Expected results** (among others)

- › new forest monitoring system with increased harmonisation and effectiveness
- › stringent procedures on QA/QC for field assessments (...) and data validation
- › reference definitions on EU level, bridging functions between country level NFI data
- › more comprehensive, reliable and interpretable data at the forest ecosystem scale
- › availability of harmonised and validated data

### **FutMon Constrains**

Harmonised data delivery: all beneficiaries participate in QA procedures and conduct the respective assessments. Beneficiary withdrawal (...) could not be compensated.

### **ACTION GROUP C1: EXPERTS, QUALITY CONTROL, COORDINATION OF DEMONSTRATION ACTIONS, AND SECTORAL EVALUATIONS**

- Coordination, development and implementation of quality assurance and control (QA/QC) procedures (incl. ground vegetation monitoring)
- by means of expert meetings, questionnaires, ringtests, laboratory inter-comparison exercises, field intercomparison courses, training courses, and the development of standards and references to be laid down in manuals.

<b>ActionC1-GV-15(IT) Quality and expertise within ground vegetation assessments</b>
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Takes the responsibility for quality assurance and control activities and provide expertise and consulting in the field of ground vegetation assessments.

*1<sup>st</sup> preparatory phase* at the national level under the coordination of the Action.

Pre-requisite for participation in the 2nd phase.

- Ground vegetation questionnaire as the basis for information on national methods.
- Preparation of national field manuals
- Inter-comparison exercises at the national level
- Field QC by independent surveyors, on a subset of intensive monitoring plots
- Recommendations on measurement practices and definitions to be applied, operative guidelines to interpret the existing definitions.

*2<sup>nd</sup> phase* at the international level.

- Evaluation of national results
- Organisation of one trans-national training and field inter-comparison course
- Final evaluation of results, and reporting and drafting of an updated methodology for ground vegetation assessments.

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***Methods employed:***

- Questionnaires and compilation of information on national methods
- Evaluation of the questionnaire results
- Compilation of information on field inter-comparison exercises at the country level
- Recommendations on measurement practices and definitions to be applied
- Update of monitoring methods
- Support to the coordinating beneficiary in the development of compliance, conformity and uniformity checks for data validation

***Expected results***

- Increased harmonisation of definitions, methods and assessments
- Quality information on national and transnational level
- Minimizing differences between countries
- Defining a range of comparability
- Achievement of a minimum standard of accuracy
- Updated monitoring method manual

***Indicators of progress***

- Submission of information on national methods
- Intercalibration courses conducted and evaluated
- Updated version of manual for monitoring methods

***Reports***

-Report QA-GV10

**Action C1-GV-15(IT) is linked to**

*ACTION A1-1(DE):* Analysis and evaluation of monitoring data

*ACTION M3-1(DE):* Data validation

*ACTION M4-1(DE):* Website

*ACTION M6-1(DE):* International dissemination of results incl. Peer-reviewed papers

*ACTION GROUP M8:* National dissemination of information

*ACTION GROUP IM1* GV surveys on a selection of intensive monitoring LII core plots in accordance with mandatory parts of the ICP Forests Manual Chapter 8:

*Includes* QA/QC measures by associated beneficiaries responsible for collecting data:

- GV questionnaire and information compilation about national methods
- Country level intercomparison exercises and control surveys (independent surveyors)
- Participation in one ground vegetation field intercomparison

*ACTION C1-QAC-15(IT):* overall quality control to promote, control and report the quality of the data gathered (contribute to Information on the current quality status of monitoring methods and Development of quality indicators and common baselines)



## **TRANS-NATIONAL TRAINING AND FIELD INTER-COMPARISON COURSE IN GROUND VEGETATION**

General aims of the exercise deal with the coordination of harmonised forest monitoring and the achievement on stringent QA/QC procedures for assessments. Results of the Field Course will help to assess and minimize differences between countries, contributing to an updated and harmonized methodology for ground vegetation assessments in a network of "core" plots serving as basis for forest monitoring in Europe.

The direct objectives of the *Trans-national training and field inter-comparison course in ground vegetation* are:

- assess of the differences between Countries due to both the different field design and the methods applied, and the observer
- contribute to the definition of a range of comparability and variability
- achieve a minimum standard of accuracy
- suggest some QA/QC activity for further Country level activities.

The common field work will also give some practical advises to increase the harmonisation of definitions (and clarify some interpretation), methods and assessments, recommendations on measurement practices.

The field exercises will also contribute to the aims of *ACTION C1-QAC-15(IT)* which is charged of promotion, control and reporting about the quality of the data gathered (by achieving information on the current quality status of GV monitoring methods and by developing quality indicators and common baselines for GV monitoring, ie.: a minimum common design).

### **I) The Exercise**

Variability sources due to the application of different Country's methods will be tested by surveys on the same object (plot) with each Country's own sampling design and assessment methods (intercomparison).

Variability due to the observer will be tested more simply by surveys on the same object (Plot) applying a common sampling design and a common method (intercalibration).

Surveys will consider essentially specific richness and specific coverage of the floor vegetation.

### **II) Study area and experimental Plots**

The reference area lies on the Cansiglio plateau, near Vallorch in a pure Beech forest on limestone bedrock with acidified soils (Haplic luvisols) at 1100 m asl (mean annual precipitation 1900mm, and temperature 5°C) under the protection status of a Biogenetic Reserve (Fig. 1).

The study area was defined as a Beech stand considered homogeneous from the point of view of the forest management and understory distribution and composition (vegetation belongs to *Luzulo albidae* – *Fagetum* Meuzel 1937 Association). The mean inclination is around 5° W, lat.+460326 long.+120156 (Fig. 2).

A basic grid of 30 50x50m units was defined and 4 Plots were randomly selected and identified by capital letters (Fig. 3).

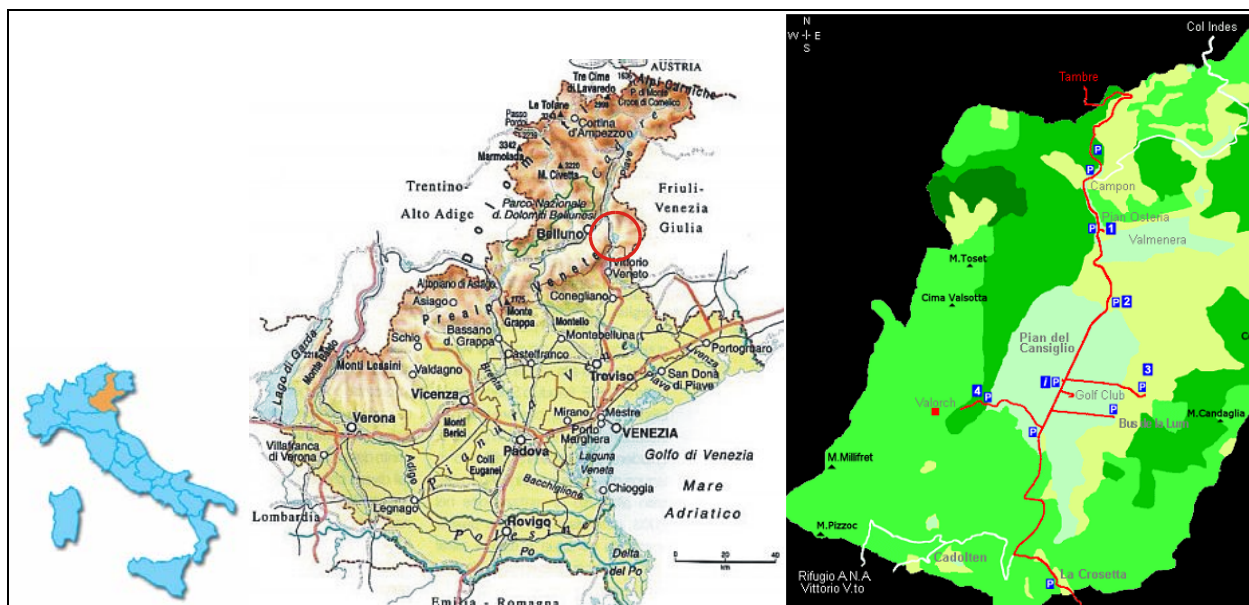


Fig. 1 – Location of the reference area within the Cansiglio Plateau (■).

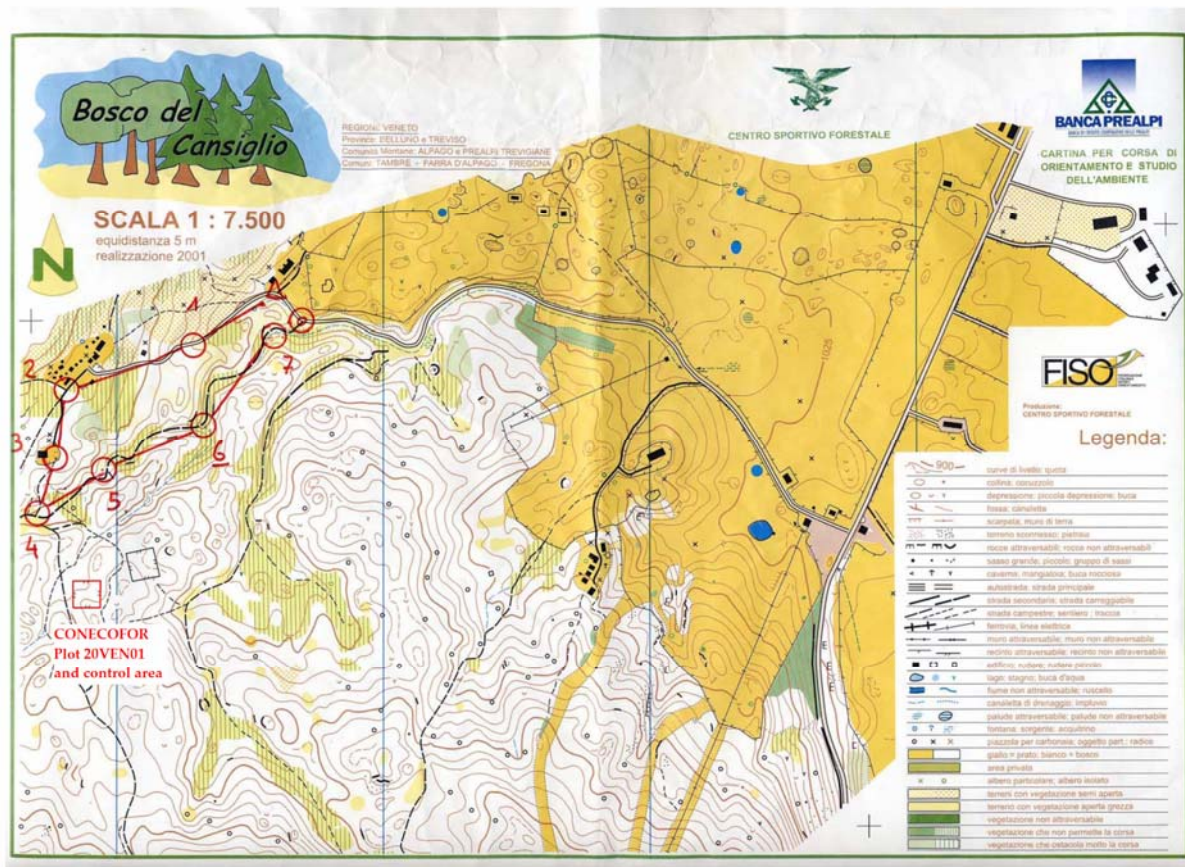


Fig. 2 – Reference area, located at the southernmost corner, below the Permanent Monitoring Plot 20VEN01 (National CONECOFOR LII network).

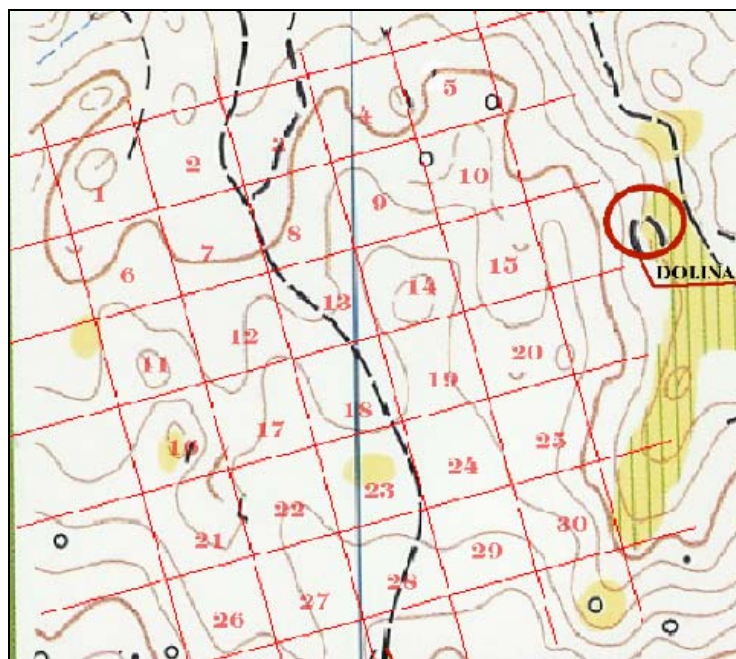


Fig. 3 – The basic grid. Plots n. 5 (A), 14 (B), 25 (C), 22 (D) have been selected for field exercises.

Experimental Plots were installed as follows:

1) Plot A, B, C used for intercomparison of different approaches, marked by corners poles. Inside each Plot, Sampling units were installed following the sampling designs of each participating Country, to reach a common sampled area of 200m<sup>2</sup> (to avoid spatial overlapping and for time requirements).

Each Sampling unit of each design is identified by markers as indicated in the GV Questionnaire. Stakes were marked by different colours and progressive numbers in order to clearly identify (both in the field and in the forms) each sampling unit.

All references you'll find in the field are reported into Fig. 4.

The circular area is visualized in the map, but will be marked only at the centre.

2) Plot D is used for the intercalibration exercise, marked by corners poles. Inside the plot two systems were placed, to explore the different scales allowed in the ICP Manual 8 (sampling units of  $\geq 100$  m<sup>2</sup> and small sampling units  $\leq 10$  m<sup>2</sup>). A chessboard systematic sampling design is used in both cases: 12 SUs 10x10 m identified by red corner stakes, and 13 2x2 m Sus identified by yellow stakes and separate series of progressive numbers (Fig. 5).



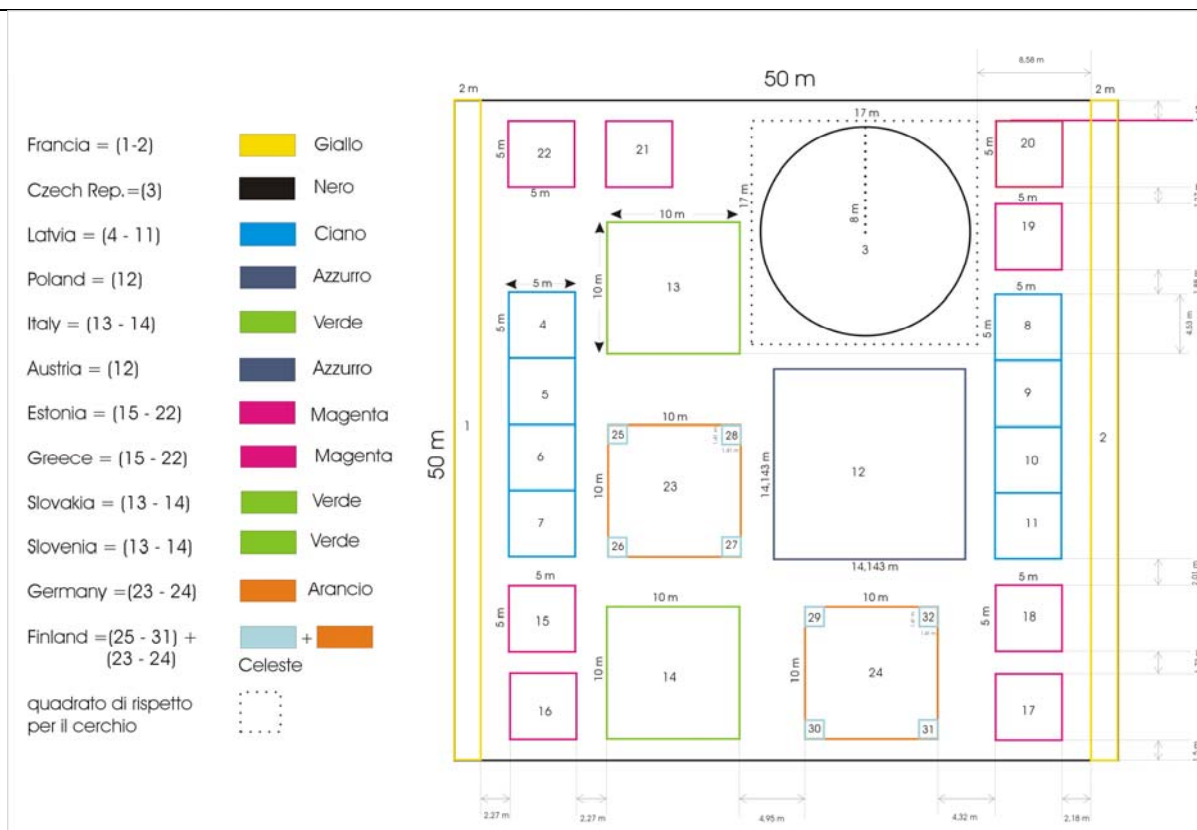


Fig. 4 – Scheme of the A, B, C replicated Plots for Country surveys approach. Colours identify Countries and numbers shows the sampling units belonging to a single design.

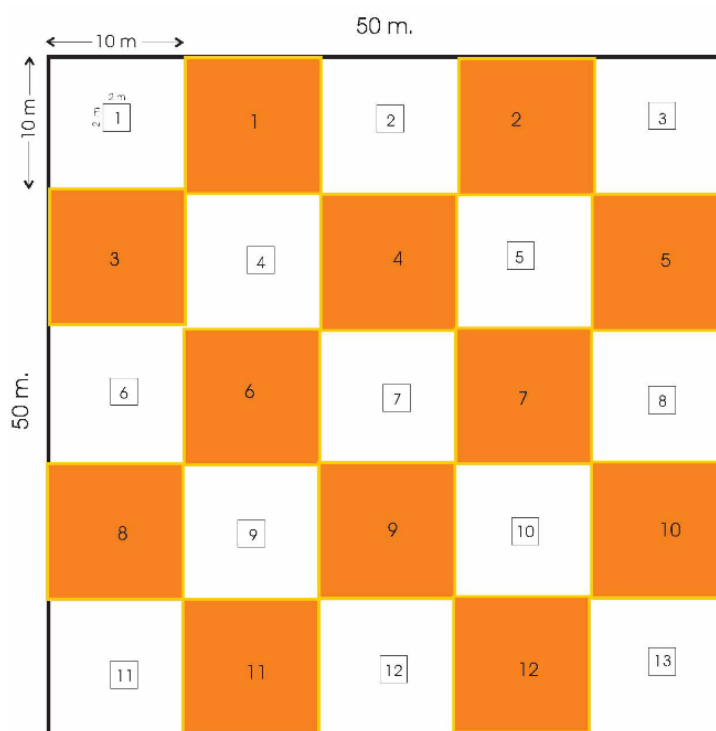


Fig. 5 – Scheme of the sampling designs for intercalibration at two scales.

### III) Surveys

Surveys will be conducted by only one person per Country (any other participant is strictly "neutral observer"), following a sequence of access indicated by the coordinating group. In case of sampling units to be visited by more than one participants (regular in the case of intercalibration Plot D), a balanced progression of disturbance will be guaranteed. In any case, it's obvious that the observer must pay a lot of attention both entering the plot and the SU, to limit the intensity of vegetation trampling.

1) Within the A, B, C intercomparison Plots, parameters to estimate are limited to specific coverage assessment of the vascular plants in herb layer. The assessment will be performed by applying the estimates, methods and techniques used in the each Country's own LII plots. Please bring with you the field Manual or protocol (if any) The definition of the herb layer stratum, the delimitation of the Sus surface and each other tool used in each Country's own LII plots must be used in the exercise Please, provide all the necessary (ropes, lines, frames, etc.).

Data record in the field will be effectuated using the tools normally adopted for surveys in each Country. Please, provide all the necessary (field computer, standard forms, pencils, etc.).

Each form or files must indicate the Country and the number of the sampling unit in order to identify each record. Please, add the time spent on each SU.

2) Within the D intercalibration Plot, parameters to estimate are limited to specific coverage assessment of the vascular plants in herb layer. The assessment will be performed by recording the visual estimation of the specific coverage directly expressed in percentage (precision 0.01%) using a common paper standard form (provided by the coordinating group). Please, remember to fill all the parts of the headlines on the form. Sampling units will be delimited in advance.

To simulate the missing familiarity with the local flora, a list of expected vascular species will be provided by the coordinating group.

### IV) Computer data entry

1) In the case of A, B, C intercomparison Plots, each observer will enter the recorded data as soon as the field work is accomplished. Data will be entered in a preformatted spreadsheet prepared by the coordinating group. Please, provide all the necessary (laptop, cables, plugs, etc.).

2) In the case of D intercalibration Pot, each observer will enter the recorded data as soon as the field work is accomplished, if possible, or within the next week at home and will send the file following the instructions of the coordinating group. Data will be entered in a preformatted spreadsheet prepared by the coordinating group.

The species names must be copied from a preformatted list of species (provided by the coordinating group) and pasted in the spreadsheet, to avoid any mistyping and formats manipulation.

**NB** field surveys will be performed in any weather (and mosquitoes) condition!

We Acknowledge the Corpo Forestale dello Stato, Comando Regionale Veneto and the personnel of the local Comando Stazione "Pian di Consiglio" for their enthusiastic support and participation to all aspects of logistics, under the supervision of Dr. De Battisti.