The SelPiBio database, a spatial tree-level and open-access dataset for black pine plantations in central Italy

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The SelPiBio LIFE project

SelpiBioLife (*Innovative silvicultural treatments to enhance soil biodiversity in artificial black pine stands*) is a project under the category Biodiversity (LIFE13 BIO/IT/000282), for innovative or demonstration projects that consider biodiversity issues within the LIFE+ Nature and Biodiversity strand.
The main goal of the project is to demonstrate the positive effects of an innovative silvicultural treatment on black pine forests.
The specific innovative treatment applied in the stands improves growth rates and stands stability and enhance the level of biodiversity of the various soil components (flora, fungi, bacteria, mesofauna, nematods and microarthropods).

Public research & public data

Science publication moves slowly towards Open Science, meaning that products of research should be made as much as possible openly available to the scientific community.
Data papers aim at describing adataset made accessible to a larger community.
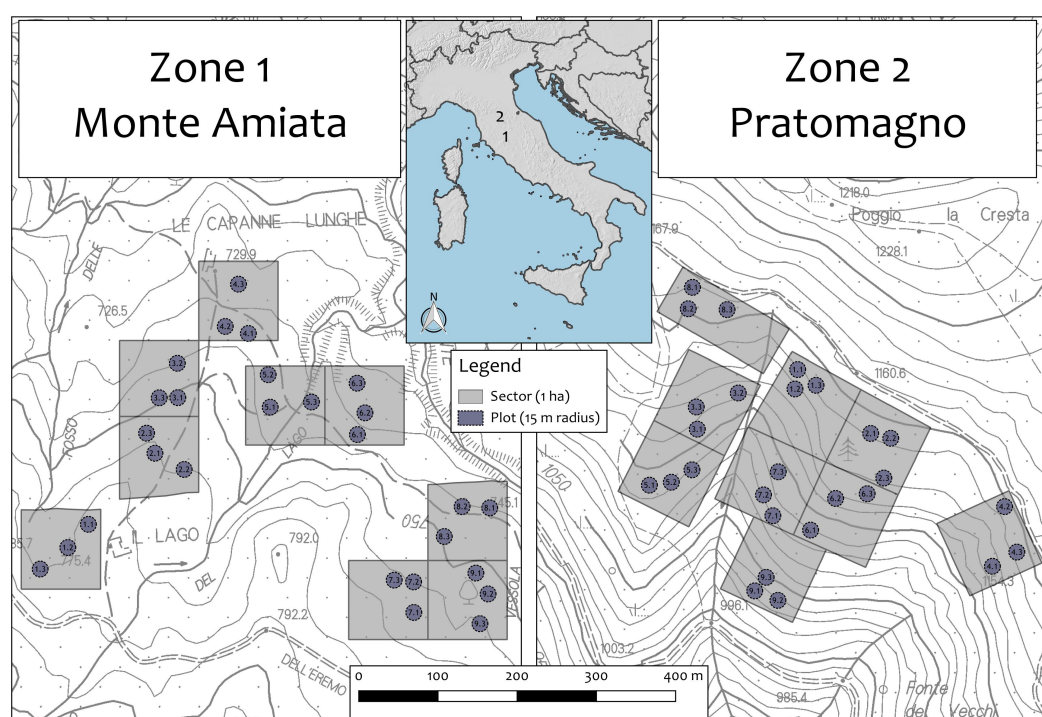*(Annals of Forest Science, Springer)*

Fig. 1 - Experimental scheme design of the two zones. Each plot is numbered with a decimal number according to the structure of the database: while theunit is the sector number (from 1 to 9), the decimal corresponds to the plot number (from 1 to 3)

Structure of the provided data

The dataset has been developed during the A2 Action (*Assessment of structural and mensurational parameters of the forest stands and the dead wood*). A tree-level database was compiled to describe the vertical and horizontal structure of 54 monitoring plots before the application of the silvicultural treatment in between 2015 and 2016.
In addition to classical in-field measurements (e.g. diameters at breast height, total height of the tree, crown depth etc.), all trees were georeferenced in each plot. A polygonal ESRI shapefile in ETRS89/UTM32N reference system (EPSG: 25832) with 4171 records representing the crown projections on the ground of each measured tree was created (Fig.2). The database includes rows (trees) and 21 attributes and is freely available from the Zonodo portal under the *Creative Commons Attribution-Non Commercial 4.0 License.*
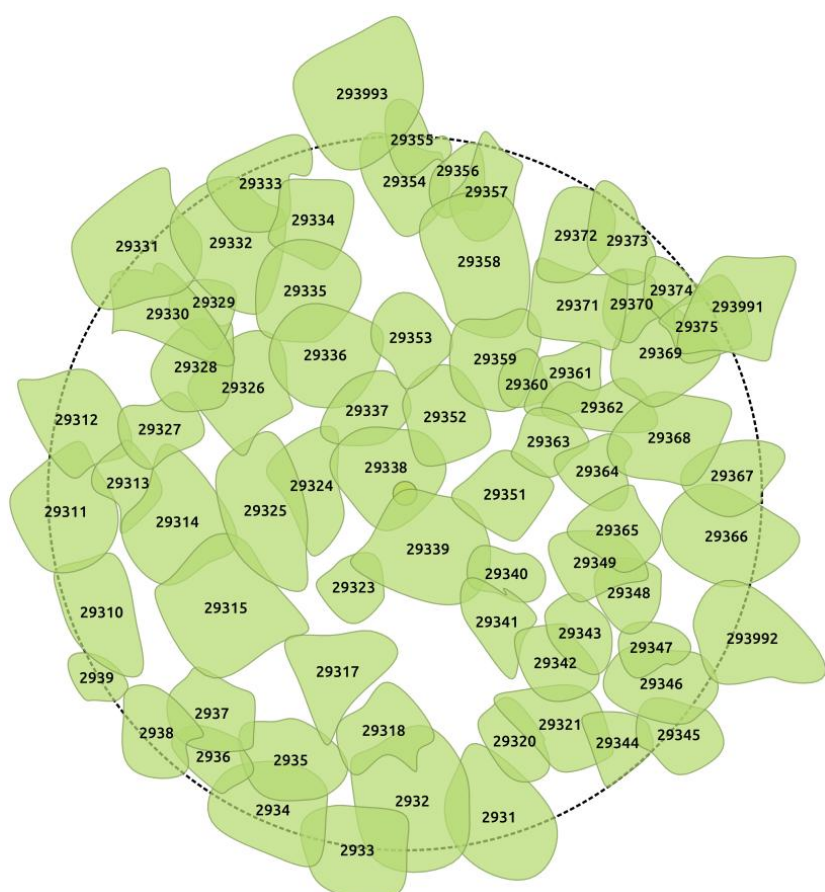

Fig. 2 - Example of a GIS plotting crown projection (plot 293), where each tree (i.e. crown projection) has its own unique ID number

References

CANTIANI P, MARCHI M (2017). *A spatial dataset of forest mensuration collected in black pine plantations in central Italy*
Annals of Forest Science 74:50. doi: http://dx.doi.org/10.1007/s13595-017-0648-8