



BOTTOMS-UP

PAPER PROJECT

Preliminary title: A European multi-taxon biodiversity platform to soundly inform sustainable forest management

Target journals: Current Forestry Reports; Forest Ecology and Management; European Journal of Forest Research

Outline:

Multi-taxonomic biodiversity sampling is usually not included in forest inventories since it requires relevant resources in terms of money, time, and, especially, of a diverse range of expertise and competences. In addition, sampling different taxonomic groups entails different spatial scales and sampling schemes, therefore poses challenges for the spatial integration of multi-taxon information within a forest stand. Recently, several research institutions took up the challenge of multi-taxonomic field sampling. The majority of these research projects are local or regional, with single- to multiple-site sampling that are designed to address specific research questions. The effects of forest structure and management on biodiversity are by far the most common topics in such studies (Van Loy et al., 2003; Elek et al. 2018, Byriel et al. 2020).

Although local, these projects invested considerable resources in collecting data for several biodiversity, structural, environmental and management variables, whose use at the continental scale is hampered by a lack of harmonization and integration.

The COST Action BOTTOMS-UP - Biodiversity Of Temperate forest Taxa Orienting Management Sustainability by Unifying Perspectives (CA18207) formed a synergy across the different research groups that collected multi-taxon data at local or national scales. It addresses the challenge of switching forest multi-taxon biodiversity monitoring and study from the local to the continental scale. The first step of the Action was to build the most comprehensive dataset of European forest biodiversity by standardizing and merging the existing information collected by multi-taxon studies associated with forest structural and management information.

Aim:

The aim is to describe this standardized and open platform for sharing data on biodiversity, structure, and management of European forests, discussing its potentialities and way forward.

Cited bibliography

- Byriel, D. B., Schmidt, I. K., Justesen, M. J., Pape, T., Hansen, A. K., Riis-Nielsen, T., & Kepfer-Rojas, S., 2019. Forest management affects crane fly (Tipuloidea) community structure through changes in edaphic conditions. *Forest Ecology and Management*, 457, 117756.
- Elek, Z., Kovács, B., Aszalós, R., Boros, G., Samu, F., Tinya, F., Ódor, P., 2018. Taxon-specific responses to different forestry treatments in a temperate forest. *Scientific Reports* 8, 16990.
- Van Loy, K., Vandekerckhove, K., Van Den Meersschaut, D., 2003. Assessing and monitoring the status of biodiversity-related aspects in Flemish forests by use of the Flemish forest inventory data. In: Corona P., Köhl M. & Marchetti M. (eds). *Advances in forest inventory for sustainable forest management and biodiversity monitoring - Forestry Sciences series nr 76*, 405-430. Kluwer Academic Publishers, Dordrecht, The Netherlands.

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Please note that if the outline changes substantially (more than 1 aim is revised substantially), or co-author(s) are added to the above lists the governing board should re-vote on the project.

Further opt-in authors:

According to the BOTTOMS-UP Bylaws any member of the BOTTOMS-UP Consortium can declare his/her interest to become opt-in author. The first author is required to preliminarily accept one such offer from each dataset that represents at least 2% of the data in the analysis. It is upon the discretion of the first author whether to accept any opt-in offer beyond this requirement. Persons interested in opt-in authorship can be nominated until with e-mail to the first author (and cc: to the BOTTOMS-UP Governing Board), explaining which dataset(s) they represent and preferentially also how they could contribute. Note however that such a nomination only means the option to become co-author. In the end only those persons will be retained as actual co-authors who have made a significant intellectual contribution to the paper during the course of its preparation (in accordance with BOTTOMS-UP Bylaws and compliance to ethics in academy).

Data to be used:

Plot-stand description data for all datasets, plus basic structural variables (e.g., basal area) from structural raw data.

Please detail which datasets will be used, also reporting specific subsetting procedures if needed.

Time line:

Deadline for permission of data usage from custodians: February 2021

Extraction of data from BOTTOMS-UP: February 2021

Data preparation and analysis: March 2021

Raw results to be sent to the wider author team: March 2021

Writing up of the paper (including preparation/optimization of figures): April 2021

Feedback round of co-authors to MS: April 2021

Submission: April 2021

Confirmation:

I confirm that I will adhere to the BOTTOMS-UP Bylaws.

Date

9/02/2021

Signature

Sabina Burrascano