PAPER PROJECT

Preliminary title: Experimental forest canopy opening: the impact on biodiversity in Europe

Target journals: Ecology Letters, Journal of Ecology, Biological Conservation, Ecology, Forest Ecology and Management

Outline: Please insert here a technical abstract with essential references that explains the relevance, hypotheses, and methodological framework of the paper. Please list clearly 3 paper aims.

The project aims to study the impact of artificial canopy opening on forest-associated biodiversity. Datasets currently considered include European forest manipulation experiments in that spatially sparse (thinning) and spatially aggregated (gap-cutting) treatments were carried out, in that the response of multi-taxon diversity is investigated. We will analyse a degree of change in richness and community composition of diverse taxonomic groups between control plots and plots under different levels of intervention (thinning intensity, gap size). Due to a high variability in study designs, we will use a per-dataset standardised effect size of differences in the number of species and in community dissimilarity index between control plots and intervention plots. Plots from one to six years after cutting will be considered as intervention plots.

Principal questions:

   (i) Which taxonomic groups benefit from interventions? Are there groups that react negatively?

   (ii) What is the effect of intervention intensity on different organism groups?

   (iii) The response of organism groups are different between sparse (thinning) and aggregated (gap cutting) interventions?

   (iv) Is the response of the organism groups to the treatments influenced by forest types (broadleaved vs. coniferous or lowland vs. mountainous)?

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Core authors from BOTTOMS-UP: Péter Ódor, Lukás Čížek, Maarten de Groot, Björn Nordén, and the custodians of the used experiments.

Core authors outside BOTTOMS-UP: Radim Hédl, Rosa Ana Lopez Rodriguez, Míriam Piqué, and the custodians of the used experiments.

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 31th May 2022 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:

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

Raw data of the thinning, gap-cutting and clear-cutting experiments from the network established by the Working Group 3 (abundance data of taxa from treated and control plots; stand structural and environmental variables collected in the experiments), metadata of the experiments. The observational database of the BOTTOMS-UP will not be used.

Time line:

Deadline for permission of data usage from custodians: Q1 2022

Extraction of data from BOTTOMS-UP: data will be asked directly from the experiment custodians: Q1 2022

Data preparation and analysis: Q2/Q3 2022

Raw results to be sent to the wider author team: end of Q3 2022

Writing up of the paper (including preparation/optimization of figures):Q4 2022

Feedback round of co-authors to MS: end of 2022

Submission: Q1 2023

Confirmation:

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

26. 01. 2022.

Flóra Tinya

Signature