

Adaption strategies in forestry under global climate change impact

Pavλίna Pancová Šimková

- MENDELU
- Faculty of Forestry
- and Wood
- Technology

Faculty of Forestry and Wood Technology

- 13 departments
- About 200 staff members
- About 1 800 students (PhD students about 200)
- Forestry
- Landscaping
- Arboristics
- Furniture design and furniture technology
- Timber structures and wood building construction
- Wood technology and timber management



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

● MENDELU
● Faculty of Forestry
● and Wood
● Technology

Faculty of Forestry and Wood Technology

- National research infrastructures
- Extensive academic background knowledge
- Up-to-date technologies
- Extensive permanent plot web covering various vegetation zones
- University Forest Enterprise Masaryk Forest Křtiny as biggest living laboratory allowing forestry experiments, sawmill practical usage and economic data analysis of running enterprise



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

University Forest Enterprise

- Practical teaching and training in forestry
- Field laboratory for forestry research
- Sustainable multifunctional forestry management
- Organising workshops and excursions for foresters or public - forestry pedagogy for children and all generations
- Special focus on recreation function / forest aesthetics



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

University Forest Enterprise

- 3 forest arboretum – collection of 800 species from whole world, oldest est. 1928
- 60 meadows with exotic tree species
- 50 buildings with springs
- 90 memorials for important people in forestry
- 230 km of forest roads - cycleway and 880 km of walking paths
- 19 strict forest reserves (9% of the forest area)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

Forest management

- 10.200 ha of forest area
- Average rotation: 112 years
- Average regeneration period: 32 years
- Average standing volume: 248 m³.ha⁻¹
- Volume increment: 7,4 m³/ha⁻¹/year
- Harvesting volume: 69.400 m³/year
- Natural regeneration - up to 50%
- FSC, PEFC certification



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

Background

- CZ.1.07/2.3.00/20.0269, INWOOD, The Establishment of an International Research Team for the Development of New Wood-based Materials (ESF, 2012-2015)
- 01DS16001 - SuProWood – Sustainable production and application of natural resources under the special attention of wood (DE-CZ bilateral project, 2016-2017)
- 01DS17011 - Danube Network Wood Research Centres, (Federal Ministry of Education and Research (BMBF), 2017 – 2019)
- ATCZ21-P2213682 - HARDIS – Mechanical disintegration of hardwood (CZ-AT-Interreg, 2017-2020)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

- MENDELU
- Faculty of Forestry and Wood
- Technology

Adaption strategies in forestry under global climate change impact - ASFORCLIC

- Call: H2020-WIDESPREAD-2018-2020 (Twinning)
- Duration: 36 months (1/1/2021 – 31/12/2023)
- Coordinator: Mendel University in Brno, CZ
- Consortium: 8 partners
 - Austrian Institute of Technology GmbH (AIT), AT
 - Universitaet fuer Bodenkultur Wien (BOKU), AT
 - Johann Heinrich Von Thuenen-Institut (THUENEN), DE
 - Technische Universitaet Muenchen (TUM), DE
 - Bayerische Landesanstalt für Wald & Forstwirtschaft (LWF), DE
 - Swedish University of Agricultural Sciences (SLU), SE
 - University of Ljubljana (UL), SI
- Budget: 895 000 EUR



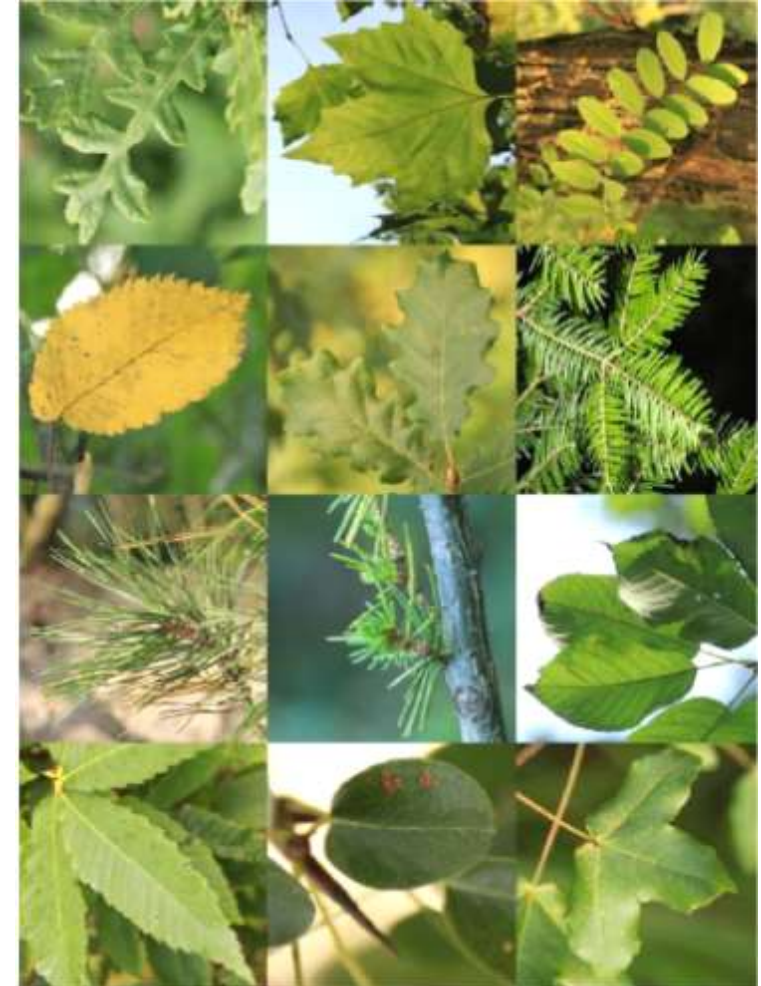
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.



- MENDELU
- Faculty of Forestry and Wood
- Technology

Join topic - „Forest of Future“

- Central European forests and its wood industry are facing strong and rapid changes
- It is necessary to transform and stabilize forests via modifying forest structure
- It results in different and new raw-materials, which must be processed and adapted for later applications as products on the market

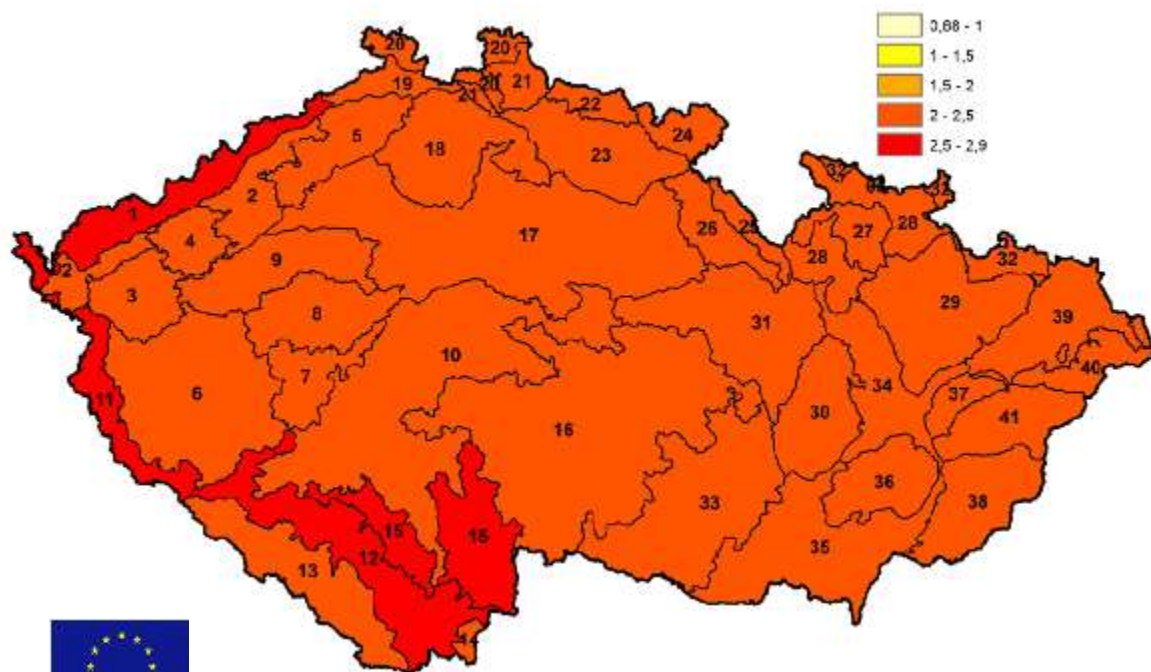


This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

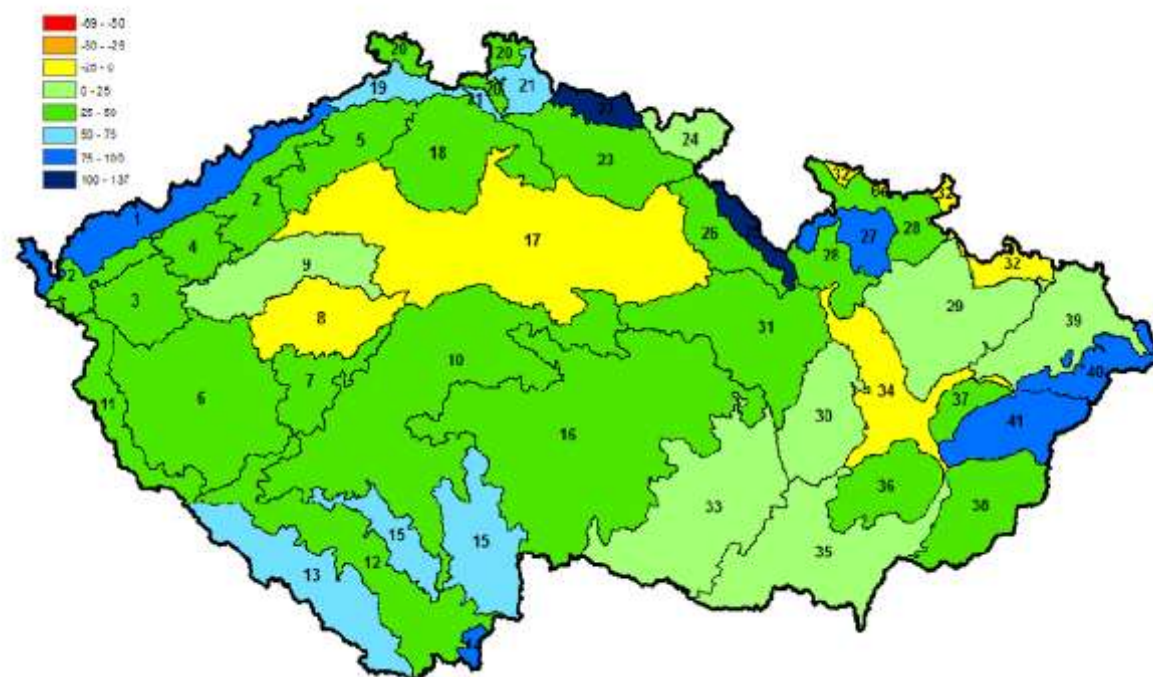
Weather and Climate Conditions

Predicted changes for 2060 comparing to 1961-1990

Annual average of air temperature (°C)



Annual amount of precipitation (mm)



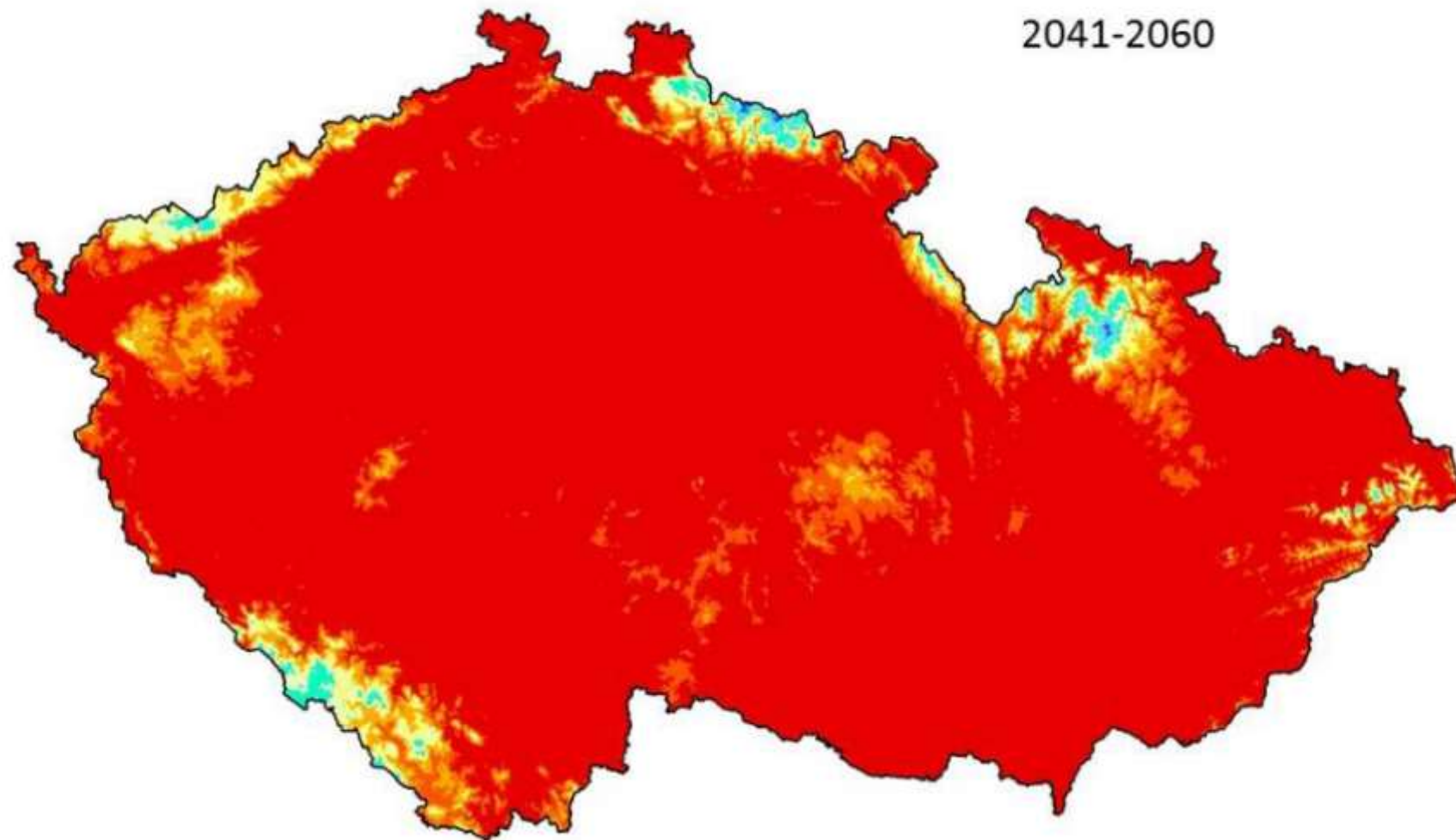
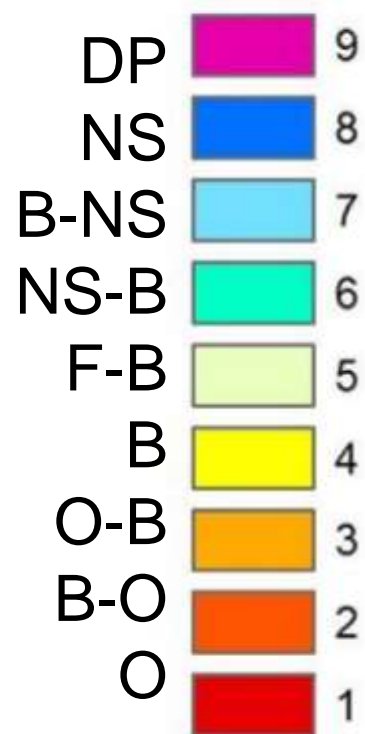
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

- MENDELU
- Faculty of Forestry and Wood
- Technology

Forest vegetation zones

GCM –IPSL model

2041-2060



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

● MENDELU
● Faculty of Forestry
● and Wood
● Technology

Achievements / Structural changes / Future projects

- Strengthen connections to excellent institution
- Awareness of the European research policies (Open Access, Open Data)
- Research Data Management Plans for Early-stage and young researchers participating on the project
- Mentor – Mentee scheme
- Invited to participate in Horizon Europe project



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

Mutual Benefits

MENDELU

- Improvement in research excellence
- Activation of new projects, influencing their quality & outputs
- Improvement in research quality, network-connections, implementation and application of new research possibilities
- New research avenues

Advance partners

- Strong connections to the Visegrad and Balkan countries
- Unique site conditions – Moravian Karst
- Availability of specific equipment
- Brain circulation
- Data sharing



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

Summary of KPIs (current state and target values)

Strategic tools	Before project 2015 - 2017	Project duration – 3 years	After project – 3 years
Publication in peer reviewed journal (Q1-Q4)	20	27	33
European Projects	0	1	3
PhD students	4	8	12
PostDoc	0	2	6
National and other projects	5	6	9
Workshop for/with industry	1	6	8
Intellectual property: Industrial application / Patent	2	4	7
Collaboration agreements with businesses (MoU/LoI)	0	3	6
New innovative products or services	1	4	7



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

Work Packages

- WP1 – Management
 - WP2 – European collaboration & research excellence
 - WP3 – Dissemination and training activities
 - WP4 – Capacity building of the early stage researchers & research & administrative staff
- WP1 – Peter Rademacher, Pavlína Pancová Šimková (MENDELU)
 - WP2 - Kyriaki Giagli (MENDELU)
 - WP3 – Geoffrey Daniel (SLU)
 - Geoffrey.Daniel@slu.se
 - WP4 – Tobias Mette (LWF)
 - Tobias.Mette@lwf.bayern.de



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

Working Groups

- WG1 – Forest of Future
- WG2 – New Wood Material
- WG3 – Bioeconomy & Policy



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

Current progress

Projects submitted

- RePeatplain, HORIZON-CL5-2021-D1-01-08, REstoration pathways for freshwater PEATlands and floodPLAINS for climate change mitigation and cobenefits

Publications

- Černý, J., Pokorný, R. Field Measurement of Effective Leaf Area Index using Optical Device in Vegetation. Canopy. J. Vis. Exp. (173), e62802, doi:10.3791/62802 (2021).
- Kučera, A.; Holík, L.; Rosíková, J.; Volařík, D.; Kneifl, M.; Vichta, T.; Knott, R.; Friedl, M.; Uherková, B.; Kadavý, J. Soil Microbial Functional Diversity under the Single-Season Influence of Traditional Forest Management in a Sessile Oak Forest of Central Europe. Forests 2021, 12, 1187. <https://doi.org/10.3390/f12091187>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

Upcoming events

- Literature seminar organised by LWF
 - 1st session on 5 November 2021
- Evaluation conference organised by MENDELU
 - April 2022



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

More about ASFORCLIC

- <https://asforclic.lfd.mendelu.cz/>
- **Twitter: @ASFORCLIC_H2020**

Subscribe to the Newsletter

- <https://asforclic.lfd.mendelu.cz/33235-newsletters>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.



- MENDELU
- Faculty of Forestry
- and Wood
- Technology

Thank you for your attention



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°952314.

- MENDELU
- Faculty of Forestry
- and Wood
- Technology