



## **Assoc. Prof. Dr. Maria Glushkova**

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Scopus: <https://www.scopus.com/authid/detail.uri?authorId=55600653700>

**Date and birth place:** 28 September 1974, Razlog, Blagoevgrad District

**Research interests:** Forest genetic resources, Protected areas, Biodiversity, Ecosystem services, Green infrastructure, Forest plantations, Bioproductivity, Non-wood forest products quality, Propagation of forest and ornamental plants

### **Education:**

2001-2006: PhD in Foret Plantations, Selection and Seed Production at Forest Research Institute, BAS. Thesis: "Genetic resources of sweet chestnut (*Castanea sativa* Mill.) and conservation methods in Bulgaria"

1995-2000: Master's degree in „Forestry“ with professional qualification: "Forestry Engineer" University of Forestry, Sofia, Bulgaria Department "Forestry". Thesis: "Study on vegetative propagation of silver spruce (*Picea pungens* Engelm.), Arizona cypress (*Cupressus arizonica* Greene.) and False cypress (*Chamaecyparis lawsoniana* Parl.)"

### **Training:**

2006 г.: CENTRLESSEM Pushkino (Russian Federation) - Training Workshop on „Forest biodiversity“ organized by International Plant Genetic Resources Institute (IPGRI), with scholarship from the Austrian Government, CGIAR, BFW

2009: Functional and Computational Genomics in Beech. IGV-CNR, Sesto Fiorentino (Florence, Italy)

2009: Institute of Plant Physiology - BAS, Sofia, "Physiology of stress in plants ", 2009

2009, 2010: University of Forestry, Sofia, "Population Genetics", 2009, 2010

2018: Capacity Building on IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) Chisinau, Moldova

### **Employment:**

2017-present: Associate Professor, Department of Forest enetics, Physiology and Plantations, Forest Research Institute, BAS

2011-2017: Assistant Professor, Department of Forest enetics, Physiology and Plantations, Forest Research Institute, BAS

2006-2011: Assisstant, Department of Forest enetics, Physiology and Plantations, Forest Research Institute, BAS

2005-2006: Forestry Engineer, Department of Forest enetics, Physiology and Plantations, Forest Research Institute, BAS

### **Administrative responsibilities:**

2018-present: Head of Ecological Stations and Arboretum, Forest Research Institute, BAS

### **Participation in expert councils and commissions:**

2018 – present - Member of the National Council for Biological Diversity, MoEW

**Membership in scientific organisations:** Union of Scientists in Bulgaria, International Plant, Propagation Society (IPPS)

**Publications:** The list of selected publications for the last five years:

- Stankova T, Velizarova E, **Glushkova M**, Dimitrov DN (2020) Quantitative parameters for fire hazard characterisation of forest stands. *Forest science* 56 (2): 47-64.
- Dodev Y, Zhiyanski M, **Glushkova M**, Won Sop Shin (2020) Forest welfare services - the missing link between forest policy and management in the EU. *Forest Policy and Economics*, 118, 102249, DOI:https://doi.org/10.1016/j.forpol.2020.102249.
- Glushkova M**, Zhiyanski M, Bozhilova M, Yaneva R (2020) Mapping economic valuation of selected ecosystem services provided by a protected area in Rhodopes Mountain. *Proceedings Vol. 1, 8th International Conference on Cartography and GIS*, Eds: Bandrova T, Konečný M, Marinova S, 1, Bulgarian Cartographic Association, 222-232.
- Glushkova M**, Zhiyanski M, Yaneva R (2020) Assessment and mapping of mountain forest ecosystem services: the case study of Pirin National park. *Proceedings Vol. 1, 8th International Conference on Cartography and GIS*. Eds: Bandrova T, Konečný M, Marinova S, 1, Bulgarian Cartographic Association, 251-259.
- Glushkova M**, Zhiyanski M, Nedkov S, Yaneva R, Stoeva L (2020) Ecosystem services from mountain forest ecosystems: conceptual framework, approach and challenges. *Silva balcanica* 21 (1): 47-68.
- Gyuleva V, Stankova T, Zhiyanski M, **Glushkova M**, Andonova E (2020) Growth and Development of *Paulownia tomentosa* and *Paulownia elongata* × *fortunei* in Glasshouse Experiment. *Bulgarian Journal of Soil Science* 5 (2): 126-142.
- Zhiyanski M, **Glushkova M**, Yaneva R (2020) Mapping soil properties and radionuclides distribution in polar ecosystems of Livingston Island. *Proceedings Vol. 1, 8th International Conference on Cartography and GIS*. Eds: Bandrova T, Konečný M, Marinova S, 1, Bulgarian Cartographic Association, 213-222.
- Stankova T, Gyuleva V, Kalmukov K, Popov E, Pérez-Cruzado C, **Glushkova M**, Dimitrov DN, Dimitrova P, Hristova H, Andonova E (2019) Effect of spacing, parental genotype and harvesting cycle on biomass production in two half-sib progenies of *Robinia pseudoacacia* L. *Forestry*, DOI:10.1093/forestry/cpz039.
- Glushkova M** (2019) Comparative assessment of growth characteristics of young hybrid poplar clones. In: *Proceeding Papers "150 Years Bulgarian Academy of Sciences"*, 175-183.
- Kercheva M, Dimitrov E, Doneva K, Velizarova E, **Glushkova M**, Shishkov T (2019) Soil water retention properties of forest soils under different land use. *Silva Balcanica* 20 (2): 73-85.
- Glushkova M**, Gyuleva (2018) Conservation of European chestnut (*Castanea sativa* Mill.) genetic resources in Bulgaria, 134-135.
- Stankova T, Gyuleva V, Kalmukov K, Dimitrov DN, Popov E, **Glushkova M**, Dimitrova P, Hristova H (2018) Woody biomass estimation of coppiced plants from open pollinated progenies of two selected black locust clones. *Proceeding papers of the International Scientific Conference "90 years Forest Research Institute – for the society and nature"*, 251-266.
- Dimitrov S, Georgiev G, Georgieva M, **Glushkova M**, Chepishcheva V, Mirchev P, Zhiyanski M (2018) Integrated assessment of urban green infrastructure condition in Karlovo region by in-situ observations and remote sensing. *One ecosystem*, 1-23.
- Djukic I, Kepfer-Rojas S, Schmidt IK, Larsen K, Beier C, Berg B, Verheyen K, Zhiyanski M, **Glushkova M** (2018) Tea composition team. 2018. Early stage litter decomposition across biomes. *Science of the Total Environment*, 628-629, Elsevier, 2018.
- Prezioso M, Zhiyanski M, Georgieva M, **Glushkova M**, Yaneva R (2018) Linking networks of protected areas to territorial development. Targeted analysis - Main report. ESPON, 1-78.
- Prezioso M, Zhiyanski M, Georgieva M, **Glushkova M**, Yaneva R (2018) Linking networks of protected areas to territorial development. Targeted analysis - Scientific report. ESPON, 1-207.
- Dimitrova P, Gyuleva V, Stankova T, **Glushkova M**, Nenkova S, Valchev I, Andreykova T, Petrin S (2017) Analysis of some feedstock properties of fast-growing broadleaved species for energy crops. *Hayka za ropara* 53 (1): 39-52.
- Glushkova M** (2017) Allozyme variation of chestnut populations in Bulgaria. *Silva Balcanica* 18 (2): 29-37.

- Zhiyanski M, **Glushkova M**, Kirova L, Filcheva E (2017) Quantitative and qualitative features of soil humus in mountain treeline ecosystems. *Silva Balcanica* 1: 5-23.
- Zhiyanski M, Sokolovska M, **Glushkova M**, Vilhar U, Lozanova L (2017) Soil quality. The Urban Forest: Cultivating Green Infrastructure for People and the Environment, Cahpet: Soil quality 49-58.
- Stankova T, Gyuleva V, Tsvetkov I, Popov E, Velinova K, Velizarova E, Dimitrov DN, Kalmukov K, **Glushkova M**, Dimitrova P, Hristova H, Andonova E, Georgiev GP, Kalaydzhiev I, Tsakov H (2016) Aboveground dendromass allometry of hybrid black poplars for energy crops. *Annals of Forest Research* 59 (1): 61-74.
- Zhiyanski M, **Glushkova M**, Ferezliev A, Menichetti L, Leifeld J (2016) Carbon storage and soil property changes following afforestation in mountain ecosystems of the Western Rhodopes, Bulgaria. *iForest* 9: 626-634.
- Sen A, Zhiyanski M, **Glushkova M**, Petkova K, Ferreira JP, Pereira H (2016) Chemical composition and cellular structure of corks from *Quercus suber* trees planted in Bulgaria and Turkey. *Wood Science and Technology* 6 (50): 1261-1276.
- Stankova T, Gyuleva V, Popov E, Velinova K, Velizarova E, Dimitrov DN, Kalmukov K, **Glushkova M**, Dimitrova P, Hristova H, Andonova E, Georgiev GP, Kalaydzhiev I (2015) Allometric relationships for aboveground biomass of juvenile black poplar hybrids. *Silva Balcanica* 16 (2): 5-28.
- Velizarova E, Stankova T, **Glushkova M**, Xanthopoulos G, Konstantinov V, Dimitrov DN (2014) Fuel types identification for forest fire risk assessment in Bulgaria. *Advances in Forest Fire Research, Imprensa da Universidade de Coimbra, Coimbra*, 1159-1164.

**Research projects.** The projects for the last 5 years are listed below:

- Comparative assessment of ecosystem services in protected areas in Rhodopes (Bulgaria) and Altai (Russia)" - MOUNTPRO, funded by the National Science Fund – Ministry of Education and Science. 2019-2021. Project leader: Assoc. Prof. Maria Glushkova.
- Assessment and mapping of ecosystem services in high mountain territories in Rila and Pirin MAPESMOUNT, funded by the National Science Fund – Ministry of Education and Science. 2018-2021. Project leader: Assoc. Prof. Maria Glushkova.
- Thermal Properties of Soils in Different Land Use and Land Reclamation, funded by the National Science Fund – Ministry of Education and Science. 2018-2020. Project Manager: Assoc. Prof. Milena Kercheva, Institute of Soil Science, Agrotechnology and Plant Protection "Nikola Pushkarov", Coordinator for Forest Research Institute - Assoc. Prof. Maria Glushkova.
- Conservation and sustainable capitalization of biodiversity in forested areas (BIOPROSPECT), funded by the program "Balkans-Mediterranean 2014 - 2021 "Conservation and sustainable capitalization of biodiversity in forested areas (BIOPROSPECT)", Contract no. BMP1 / Z1 / 2336/2017, 20.10.2017; INTERREG VB "Balkan-Mediterranean 2014-2020" Program). 2018-2019.
- Linking networks of protected areas to territorial development, financed by ESPON "European Grouping on Territorial Cooperation", Luxembourg. Срок: 2017-2018. Project Coordinator for Bulgaria: Prof. Dr. Miglena Zhiyanski.
- Bilateral Cooperation Bulgaria - Norway", funded by the Financial Mechanism for the European Economic Area (EEA FM) 2009-2014. 2017. Project manager: Prof. Dr. Miglena Zhiyanski.
- Toward better UNderstanding the Ecosystem Services in URban environments trough assessment and mapping", / FRI-BAS, funded by FM of EEA 2009-2014 [www.tunesinurb.org](http://www.tunesinurb.org), Programme BG03 Biodiversity and ecosystems and Contract No. D 33-82/14.08.2015 / partners– Sofia University "St. Kl. Ohridski", Geographica Ltd. And NIBIO, Norway. 2015-2017. Project manager: Prof. Dr. Miglena Zhiyanski.
- Land-use and management impacts on carbon sequestration in mountain ecosystems", финансиран от Българо–Швейцарската Програма за сътрудничество. Срок: 2013-2015. Ръководител: проф. д-р Миглена Жиянски.
- Action CA 18134 „Genomic Biodiversity Knowledge for resilient Ecosystems“, MC member. 2019-2023.
- COST Action CA 18135 “Fire in the Earth System: Science & society”, MC member. 2019-2023.

- COST Action CA 18207 “Biodiversity Of Temperate forest Taxa Orienting Management Sustainability by Unifying Perspectives”, MC member. 2019-2023.
- Assessment of the regional contribution of Antarctic islands soils to the global carbon balance by determining the degree of stabilization and humification of the organic matter”, funded by National Science Fund, MES. 2019-2021. Project leader: Prof. Dr. Miglena Zhiyanski.
- Environmental protection and reduction of the risk of adverse events and natural disasters. WP I.1.4 Impact of Climate Change on Forest Ecosystems”, funded by Ministry of Education and Science. 2018-2023. Project manager: Prof. Dr. Margarita Georgieva.
- Collection, analysis and evaluation of forest data in order to apply the Gain-Loss method based on the balance between income and expenditure of carbon, and development of a new model for calculating emissions and sinks from the sector Land use, Land Use change and Forestry (LULUCF), funded by the Ministry of Environment and Water. 2018-2019. Project manager: Prof. Dr. Miglena Zhiyanski.
- Biomonitoring of the state of components of polar ecosystems on Livingston Island under global changes”, funded by the Bulgarian Antarctic Institute. 2018-2019. Project leader: Prof. Dr. Miglena Zhiyanski.
- Study of the combined impact of natural radioactivity, UV radiation, climate change and cosmic radiation on selected model groups of plant and animal organisms in mountain ecosystems”, funded by the National Science Fund, Ministry of Education and Science. 2017-2019. Project leader: Prof. Dr. Hristo Angelov – INRNE.
- Assessment of bio-productivity of fast growing broadleaf species, funded by the National Science Fund, Ministry of Education and Youth. 2016-2019. Project Manager: Assoc. Prof. Dr. Veselka Gyuleva.
- Ecosystem based information system covering sensitive mountain areas in Bulgaria, Bilateral project: Bulgaria – Germany funded by the National Science Fund, Ministry of Education and Youth. 2015-2017 Project Manager: Assoc. Prof. Dr. Miglena Zhiyanski.
- Simulation of the behavior of forest and field fires, funded by the National Science Fund – Ministry of Education and Youth. 2013-2015. Project Manager: Assoc. Prof. Dr. Pencho Marinov, Institute of Information and Communication Technologies – BAS.
- Comprehensive assessment of the potential of forest and agricultural species for establishment of energy plantations in Bulgaria”, funded by the National Science Fund, Ministry of Education. 2013-2015. Project Manager: Assoc. Prof. Dr. Veselka Gyuleva.
- Elaboration of classification of the types of combustible materials in forest ecosystems, funded by the Executive Agency of Forestry. 2013-2015. Project Manager Assoc. Prof. Dr. Emiliya Velizarova.