

Resilient Forests for the Future

EVOLTREE Conference 2023

12 – 15 September 2023

UNITBV, Braşov, Romania

Book of Abstracts



Transilvania University of Braşov

Impressum

Citation:

Eds: Curtu, Alexandru Lucian; Ciocîrlan, Elena (2023)
Resilient Forests for the Future. Book of Abstracts.
EvolTree Conference 2023, 12-15 September 2023, Braşov, Romania.
Transilvania University of Braşov UNITBV, 148 pp.
DOI: 10.31926/evoltree.2023

The authors are responsible for the content of their contribution.

Contents

Impressum	2
Contents	3
Committees	4
Short program	5
Session 1: Climate resilient forests - oral presentations	7
Session 1: Climate resilient forests - posters	14
Session 2: Tree genomics & biotic interactions under climate change - oral presentations ...	33
Session 2: Tree genomics & biotic interactions under climate change - posters	39
Session 3: Evolutionary genomics - oral presentations	45
Session 3: Evolutionary genomics - posters	52
Session 4: Innovative methods and approaches - oral presentations	61
Session 4: Innovative methods and approaches - posters	68
Session 5: Conservation genomics - oral presentations	76
Session 5: Conservation genomics - posters	83
Session 6: Tree breeding and sustainable use of forest genetic resources - oral presentations	94
Session 6: Tree breeding and sustainable use of forest genetic resources - posters	103
Authors Index	126

Committees

Scientific committee

Prof. Dr. F.A. (Phil) Aravanopoulos, University of Thessaloniki, Greece

Dr. Katharina Birgit Budde, Georg-August University, Göttingen, Germany

Prof. Dr. Alexandru Lucian Curtu, Transilvania University of Brasov, Romania

Dr. Felix Gugerli, WSL Birmensdorf, Switzerland

Associate Professor Dr. Ole Kim Hansen, University of Copenhagen, Denmark

Dr. Annika Perry, UK Centre for Ecology & Hydrology, UK

Dr. Christian Rellstab, WSL Birmensdorf, Switzerland

Dr. Hilke Schröder, the Thünen Institute, Germany

Local organizing committee (UNITBV, Romania)

Prof. Dr. Alexandru Lucian Curtu

Associate Professor Dr. Elena Ciocîrlan

Prof. Dr. Neculae Şofletea

In situ conservation of forest genetic resources at the locality „Duboka” in the National Park „Kopaonik” – Serbia

Contribution ID: 173

Nonić, Marina; Šijačić-Nikolić, Mirjana; Vilotić, Dragica; Maksimović, Filip; Šumarac, Predrag

In situ conservation in Serbia is mainly presented in protected areas, such as national parks. National Park „Kopaonik” is one of five national parks in Serbia, which covers a total area of 11,969.04 ha, including 13 localities with a protection regime of the first degree. Forest genetic resources in the National Park „Kopaonik” are affected by various biotic and abiotic threats which lead to their genetic erosion. This research aimed to identify rare, endangered, relict, endemic, and vulnerable forest trees at the locality „Duboka”, to assess their degree of endangerment and propose conservation measures. The locality „Duboka” covers an area of 144.03 ha, at an altitude of between 1020 and 1780 m. By terrain reconnaissance, a total of 18 forest tree species, and 27 species in the shrub layer were identified, which indicates a significant biodiversity of this locality. Nine forest tree species belong to the categories of rare (rowan and wych elm), rare-endangered (silver birch), relict (European hop-hornbeam), endemic (Balkan maple), and vulnerable species (aspen, wild cherry, wild pear, and whitebeam) in Serbia. Among those species, it is very important to conserve the available gene pool of European hop-hornbeam (*Ostrya carpinifolia* Scop.), which is a very rare, relict species that occurs only in the locality „Duboka” in the entire area of Kopaonik, and the Balkan maple (*Acer heldreichii* Orph. ex Boiss.), an endemic species whose range is drastically decreasing on the entire Balkan peninsula. The measures of conservation and monitoring of individual genotypes or groups of trees have been defined, and an assessment of the variability of gene pool using genetic markers was proposed. In situ conservation units will include sites where all nine rare, endangered, relict, endemic, and vulnerable forest tree species were selected and georeferenced. The implementation of the proposed measures is expected in the following period.

Keywords: relict and endemic species, natural protected areas, conservation, genetic resources

Identification of the field elm gene pool in the protected natural area KOSMAJ (Serbia) as a basis for its conservation and sustainable use

Contribution ID: 174

Šijačić-Nikolić, Mirjana; Nonić, Marina; Kerkez-Janković, Ivona; Maksimović, Filip

The field elm (*Ulmus minor* Mill.) is an autochthonous tree species in Serbia that occurs as a secondary species in oak forests. In the forest fund of Serbia, this species is rare/endangered due to the genetic erosion and disappearance of elms from natural populations, mainly as a result of Dutch elm disease. In the protected natural area „Kosmaj“ the field elm was identified as one of the target species from the aspect of conservation. This research aimed to identify and assess the state of available field elm genepool in the protected natural area „Kosmaj“, as a basis for its conservation and sustainable use. By terrain reconnaissance a field elm gene pool was identified, representing almost 100 trees: 47 individuals and 8 groups of trees, on an area of 652.99 ha. All trees were georeferenced and mapped. The average height of the trees is 10.34 m, the diameter at breast height is 15.68 cm, the perimeter is 51.09 cm, while the average crown span is 3.95 m. Dry tops or dry side branches of trees, absence of yield for a long period, and weak natural rejuvenation were recorded. The selected trees will be included in conservation units, which were proposed to conserve the available gene pool in situ. To conserve the available genepool ex situ, the cuttings from selected mother trees were collected and the clonal test was established in the greenhouse of the Faculty of Forestry, University of Belgrade. This clonal test could be a basis for the establishment of a field gene bank in the future. It is planned to determine the variability of the selected trees, using morphological and molecular markers. The initiated activities should contribute to the conservation and sustainable use of the field elm gene pool in the protected natural area „Kosmaj“ and further breeding of the species.

Keywords: *Ulmus minor* Mill., natural protected areas, conservation, gene pool, clonal test