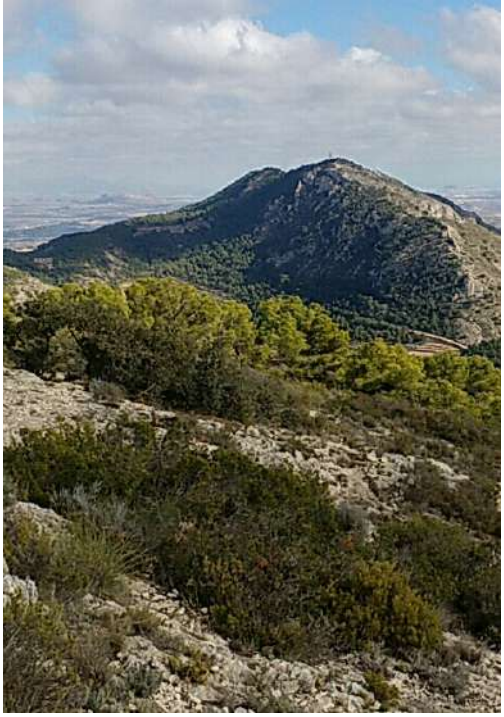



ABSTRACTS BOOK

SER EUROPE

12th SERE CONFERENCE

7th – 10th SEP 2021

online

SER EUROPE 12th SERE CONFERENCE 7th – 10th SEP 2021 online

A NEW GREEN DEAL FOR EUROPE'S NATURE

Science and political action towards socio-ecological restoration

Dear colleagues.

The organizing committee and the University of Alicante welcome you to the 12th European Conference on Ecological Restoration SERE2021.

Between September 7 and 10 2021, we will discuss challenges facing ecological restoration in post-2020 Europe, and particularly, how can ecological restoration promote the recovery of damaged, degraded and destroyed socio-ecological systems in these critical times.

Ecological restoration is increasingly present in our lives. UN Declaration of 2021-2030 as the Decade of Ecological Restoration clearly responds to social concerns and illustrates commitment towards using ecological restoration to fight major environmental problems. Yet, international high-level initiatives should scale down and translate into concrete actions.

The advance of ecological restoration in Europe has been slow for reasons that are political and socio-economical, rather than ecological. Because of the onset of the UN Decade, and ongoing discussions on the EU Biodiversity Strategy for 2030, the Farm-to-Fork Strategy, and the Action Plan for Disaster Risk Reduction (2015-2030), 2021 should be the turning point to develop ambitious European legislative and funding frameworks for ecological restoration that will help Member States respond to current environmental crises.

In parallel, our societies are undergoing profound changes. The diversity of policies concerning nature and environmental protection in EU Member States clearly illustrates the search for new ways to understand growth and re-define human role in the Biosphere, and the tensions behind them. Europeans look astonished at the magnitude of the global challenge and must find ways to establish a healthier relation between culture and nature before it is too late.

In SERE, we know about this, and the way ecological restoration can sustain the new deal. For almost 30 years, our Society has helped to bridge the gap between humans and nature, and we know firsthand that ecological restoration can contribute to adapt and mitigate climate change, halt species extinction and combat desertification, while contributing to reduce poverty and inequality.

For some late-summer days, academics and practitioners from Europe and beyond will meet to discuss these topics and advance the theory and practice of socio-ecological restoration in Europe. This book summarizes the contributions of more than 300 experts from a wide range of geographic contexts and sectors. Abstracts refer to video-recorded presentations that will soon be freely available on the web, to promote knowledge exchange and upscale ecological restoration in Europe.

JORDI CORTINA-SEGARRA
Chair SER Europe
University of Alicante

Biomass accumulation in forest floor and litterfall in *Robinia pseudoacacia* restoration plantations

Author(s): Xanthopoulos, G[1]; Radoglou, K[1]; Spyroglou, G[2]; Fotelli, M.N[2]
Affiliation(s): [1]*Department of Forestry and Management of Environment and Natural Resources, Democritus University of Thrace, N. Orestiada, Greece*
[2]*Forest Research Institute, Hellenic Agricultural Organization Dimitra, Vasilika, 57006 Thessaloniki, Greece*
Email: georxant9@fmenr.duth.gr

ABSTRACT

Post-mining restoration of degraded soils with forest plantations enhances climate change mitigation through carbon storage. At the Lignite Center of the Public Power Corporation in Western Greece c. 2,200 ha of land are planted for this purpose with black locust (*Robinia pseudoacacia*), as it is a fast-growing, drought tolerant species, characterized by its N-fixing ability and high carbon sequestration potential. This study was conducted within the COFORMIT project and aimed at estimating the pools of litterfall and forest floor in these plantations and at assessing their seasonal fluctuation and the effect of varying canopy density. Sampling was performed bimonthly for a year, at 18 plots, covering the range of tree DBH (diameter at breast height) of the plantations. In each plot, litterfall and forest floor were sampled at two locations of different canopy density (high: 96.0% vs low: 90.5%). The dry biomass of both pools peaked during senescence, from October till December 2020. However, the seasonal pattern of biomass accumulation of the two pools differed in the preceding period. Litterfall was low till April, when leaf expansion began, and increased gradually till autumn, while forest floor biomass gradually decreased from the beginning of the year till August and then substantially increased in autumn – winter. Litterfall accumulation was greater in higher vs lower canopy density (1.74 vs 1.37 tn ha^{-1} yr^{-1}). A similar but less pronounced effect was observed in forest floor biomass accumulation (37.26 vs 36.91 tn ha^{-1} yr^{-1} in higher and lower canopy density stands, respectively), probably due to the effect of understorey herbaceous vegetation on forest floor accumulation. In the next steps, these results will be combined with the biomass determination in all ecosystem pools to estimate the carbon footprint of these restoration plantations.

Keywords: Climate change, Ecological restoration, Mines, Restoration strategy/planning, Carbon sequestration.