

Romania's National Catalogue of Virgin and Quasi-Virgin Forests -Important Advances in Forest Biodiversity Conservation

ISSN: 2637-7802



***Corresponding author:** Borlea Gheorghe Florian, The Banat University of Agricultural Sciences and Veterinary Medicine "King Mihai I of Romania" in Timisoara, 119 Aradului Avenue, Timișoara, Romania

Submission: 📅 July 29, 2022

Published: 📅 August 26, 2022

Volume 3 - Issue 2

How to cite this article: Turcu DO, Borlea GF. Romania's National Catalogue of Virgin and Quasi-Virgin Forests -Important Advances in Forest Biodiversity Conservation. Biodiversity Online J. 3(2). BOJ. 000559. 2022.

Copyright@ Borlea GF. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use and redistribution provided that the original author and source are credited.

Turcu DO¹ and Borlea GF^{2*}

Borlea Gheorghe Florian, The Banat University of Agricultural Sciences and Veterinary Medicine "King Mihai I of Romania" in Timisoara, 119 Aradului Avenue, Timișoara, Romania

Abstract

The virgin forests are the most complex forest ecosystems having a high degree of naturalness and providing precious information and sustainable management models for forestry practices as well as for biodiversity conservation. Some of the most essential virgin forests from Romania have already been nominated as protected areas (mainly strict forest reserves), but others are well isolated, still have an anonymous status, and were protected by their geographic and socio-economic conditions. Nowadays, they are investigated through national project research and the results are included in a National Catalogue. Additional efforts are necessary to identify all the potential virgin forests in the area, analyze their characteristics and validate them as virgin forests as well as establish them as protected areas.

Keywords: Virgin forests; Quasi-virgin forests; Naturalness; Sustainable biodiversity conservation; Forest management models

Introduction

One of the best examples of sustainability is a large undisturbed natural forest as the place where you can find answers for your questions as well as examples and models for biodiversity conservation best practice. There are different designations in scientific literature given for the undisturbed forests with high naturalness (virgin forests, quasi-virgin forests, undisturbed forests, primary forests, natural forests, no human or minimum intervention, old-growth forests, ancestral forests) [1]. These forests have always been considered very complex major ecosystems and excellent objects for scientific research purposes in order to find information on their structure and dynamics or even models which can be replicated in the managed forests or in biodiversity conservation [2-7].

Case Presentation and Discussion

The large undisturbed forests, located in very isolated areas with special socio-historical evolution and present-day situation (administrative borders, natural barriers) and with poor or without transportation infrastructure along the Carpathians Mountains, have impressed different researchers and visitors in the last decades. The most important qualities of forests here are related to their high naturalness level and important areas have such characteristics which qualify them as virgin forests. The establishment of the first protected areas in Romania is a controversial issue in the literature, but their evolution includes a forest as the the first natural reserve in 1904 (The Forest Reserve Slătioara), the first National Park in 1935 (Retezat), and more than 620 natural reserves which were established at local and national level until 1990. The present-day system of protected areas with their surfaces and borders in Romania were legally established in 2000 and their internal zoning was designed in 2003 for National Parks and in 2007 for Natura 2000 sites. Unfortunately, there are still important disputes around this issue. One of the most important ongoing disputes has been the official recognition of some areas as virgin forests and their enclosure under strict legal protection

regime. For a long time, many forests protected areas in Romania have been almost unknown at international level and related projects, programs or statistics have offered scarce information, low figures, or no data at all for Romania [1]. The study of virgin forests in this area has started with the research of Popescu-Zeletin followed by Prodan [6-9].

The first inventory of the virgin forests at national level was carried out between 2000 and 2005, as a PINMATRA project, based on filtering all the forest management plans database, followed by a selection and validation process in the field. The result of this preliminary study was a database for 218 500ha of potential virgin forests located in mountain areas but not legal or administrative consequences follow-up these research projects. Meanwhile, the national legal framework related to the nature protection and biodiversity conservation has been adapted in a few steps in accordance with the EU aquis and the international legislation in the field. In 2016, the State Authority for Environment and Forests established the procedure to be performed to include a forest stand in the National Catalogue of Virgin and Quasi-Virgin Forests, the admission criteria (naturalness, minimum total area and limits) and the indicators for the virgin forests (the natural composition and distribution of species, the presence of complex stand structures, high biodiversity, no human activities, presence of standing and fallen dead wood, adequate stand density, unaltered soil, no accessibility, natural limits and minimum 20ha total area with continuous and compact disposal). There are similar indicators for quasi-virgin forests with some differences: minimum 30ha total area, and maximum 5 old stumps/ha, as well as unused roads older than 30 years are accepted. As the result, the current version of the National Catalogue of Virgin and Quasi-Virgin Forests, has been published officially on the site of the State Authority for Environment and Forests, since 15 December 2021, it comprises 8579.80ha of virgin forests (6064.92ha of spruce stands, 145.76ha of silver fir stands, 2097.39ha of beech stands, 206.63ha of sessile oak stands and some other broadleaves species forest stands. The quasi-virgin forests consist of 20249.41ha of spruce stands, 3599.01ha of silver fir stands, 34203.41ha of beech stands, 3265.56ha of sessile oak stands, 36.67ha of Turkey oak and Hungarian oak stands and 13.49ha of poplar, willow and alder stands, and other forest stands. Important flora and fauna endangered wild species in Romania are very much related to these untouched forest areas finding here unique habitat conditions. Only some of those forests have already been established as protected areas (strict forest reserves [10], or natural reserves in the present-day National Parks or Natura 2000 sites [11,12].

Conclusion and Recommendations

The establishment of the Romanian virgin forest catalogue is an important step forward to an effective and sustainable forest biodiversity conservation in Romania and in Europe, but further investigations are still necessary in this respect especially on the GIS part together with field observations in order to identify the

valuable virgin forests and to propose to the authorities their transformation/constitution into nature reserves. This procedure is in accordance with the present-day Forestry Code (2008), which states that the virgin forests should be protected. Romanian virgin forests ecosystem complexity and functionality, their outstanding biological diversity (including the presence of the large carnivores) and their potential of living sustainability laboratories are important arguments for the designation of all virgin forests from the National Catalog of Romania as scientific strict reserves and their enclosure in the UNESCO List.

Acknowledgements

We would like to express our deep appreciation to the The Banat University of Agricultural Sciences and Veterinary Medicine “King Mihai I of Romania” in Timisoara, Romania, to the Research Station Braşov and to the Research Station Timișoara of the National Institute for Research and Development in Forestry “Marin Drăcea”, Romania for all the support.

Conflict of Interest

I declare that any financial interest or any conflict of interest related to the above article does not exist.

References

1. Parviainen J (2005) Virgin and natural forests in the temperate zone of Europe. *Forest Snow and Landscape Research* 79 (1-2): 9-18.
2. Diaci J, Frank G (2001) Urwälder in den Alpen: Schützen und Beobachten, Lernen und Nachahmen. In *Internationale Alpenschutzkommission* 2: 253-256.
3. Giurgiu V, Doniță N, Bândiu C, Radu S, Cenușă R (2001) Les forets vierges de Roumanie. Edite par l'ASBL Foret Wallone, Louvain-la-Neuve, Belgium pp: 206.
4. Korpel S (1995) Die Urwälder der Westkarpaten. Germany, pp: 310.
5. Peterken GF (1993) Long-term studies in forest nature reserves. Netherlands.
6. Tomescu R, Târziu D, Gancz V, Petrila M, Teodosiu M, et al. (2006) A Study of the Stability Factors in Natural Forest Ecosystems. Evaluation of the Possibilities to Ameliorate the Silvicultural Practices for the Sustainable Management of the Forests, Romania.
7. Turcu DO (2012) Research on the structural dynamics of virgin beech forests and mortality of trees in the Izvoarele Nerei Nature Reserve pp: 156.
8. Bândiu C, Smejkal GM, Vișoiu SD (1995) Pădurea seculară. Cercetări ecologice în Banat. Romania pp: 160.
9. Luick R, Reif A, Schneider E, Grossmann M, Fodor E (2021) Virgin forests at the heart of Europe-The importance, situation, and future of Romania's virgin forests. *BLNN* pp: 101.
10. Borlea GF (1999) Forest reserves and their research in Romania pp: 67-86.
11. Leibundgut H (1993) Europäische Urwälder. Wegweiser zur naturnahen Waldwirtschaft. Germany, pp: 260.
12. Veen P, Biriș IA (2004) Inventory and strategy for sustainable management and protection of virgin forests in Romania. Romania, pp: 61.