

# **THE ROLE OF FORESTS IN BIODIVERSITY CONSERVATION AND THE CARBON CYCLE**

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## **Анотація**

*Доповідь присвячена вивченню важливої ролі лісів у підтримці біологічного різноманіття та регуляції вуглецевого циклу. Дослідження показують, що ліси відіграють критичну роль у збереженні різноманітних видів рослин та тварин, а також здатні поглинати та зберігати значні обсяги вуглецю. В рамках доповіді будуть розглянуті такі аспекти: роль лісів у збереженні біорізноманіття, вплив лісів на клімат та їхній внесок у регуляцію вуглецевого циклу. Крім того, будуть розглянуті проблеми, пов'язані з лісовою деградацією та втратою біорізноманіття, а також методи сталого лісового господарства.*

**Ключові слова:** ліси, біорізноманіття, вуглецевий цикл, клімат, лісова деградація, стале лісове господарство.

## **Abstract**

*The article focuses on exploring the crucial role of forests in supporting biodiversity and regulating the carbon cycle. Research has shown that forests play a critical role in preserving diverse plant and animal species and have the capacity to absorb and store significant amounts of carbon. The presentation will cover the following aspects: the role of forests in biodiversity conservation, the impact of forests on climate, and their contribution to regulating the carbon cycle. Additionally, the issues related to forest degradation and biodiversity loss will be discussed, along with sustainable forest management practices.*

**Key words:** forests, biodiversity, carbon cycle, climate, forest degradation, sustainable forest management.

## **Introduction**

Forests are crucial ecosystems, covering 30% of the Earth's land area and housing 80% of terrestrial biodiversity. They play a vital role in preserving biodiversity and regulating the global carbon cycle. Forests provide habitats for diverse species, support ecological interactions, and act as carbon sinks, mitigating climate change. However, forests face threats like deforestation and climate change. Understanding the role of forests in biodiversity conservation and the carbon cycle is essential for effective conservation and sustainable forest management. This presentation explores the importance of forests, their challenges, and the need for sustainable practices to ensure their long-term health and resilience.

## **Research Results**

According to research conducted by the World Wildlife Fund (WWF), Ukraine still has pockets of untouched forests in the Carpathian Mountains and possibly in the Polissia region. These areas serve as islands of untouched wilderness in the country.

Primeval forests are unique forest ecosystems that have remained untouched by human intervention. Such forests are preserved on almost every continent. They differ in their structure and the diverse living organisms that inhabit them. The publication "Tree Hugger" states that globally, there are no many preserved and ancient forests left. However, there are still places where significant remnants of ancient forest cover can be found.

These areas serve as important remnants of primeval forests in the country. Globally, the preservation of ancient forests is becoming increasingly rare, but there are still significant pockets of ancient forest cover in certain regions.

One such example is the Tongass National Forest in Alaska, USA. Spanning an impressive 6.8 million hectares, it stands as the largest national forest in America. The Tongass is renowned for being the most untouched temperate

rainforest in the world. Within its ancient boundaries, sections of the forest date back thousands of years, housing trees that have withstood the test of time for over 800 years. It boasts an unparalleled organic biomass per hectare, surpassing even the lush tropical jungles. Additionally, the Tongass is also characterized by its mesmerizing "forest" of marine algae that blankets the shores during low tide.

Across the globe, another notable forest stands as a testament to conservation efforts. The Waipoua Forest in New Zealand endured significant exploitation following the arrival of European settlers in the 19th century. However, in 1952, recognizing the importance of preserving the remaining ancient kauri trees, the Waipoua Forest and its neighboring forests were designated as a sanctuary. This designation aimed to protect and safeguard the remaining treasures of this once-pristine ecosystem.

These examples highlight the significance of preserving primeval forests and the need for continued conservation efforts. Whether it be through designated sanctuaries or the protection of untouched regions, safeguarding these ancient ecosystems ensures the preservation of unique biodiversity and the delicate balance of nature for generations to come.

### Conclusion

The research confirms the existence of untouched forests in various parts of the world, including Ukraine, Alaska, and New Zealand. These primeval forests are valuable natural reserves that preserve biodiversity and perform crucial ecosystem functions.

However, they also face threats such as exploitation and habitat destruction. Preserving these forests is a critical task that requires effective conservation and resource management measures.

Governments, organizations, and individuals must collaborate to ensure the long-term protection and restoration of primeval forests. It is important to implement sustainable forest management practices, preserve valuable areas, promote natural regeneration of forests, and support responsible resource exploitation.

Only through collective efforts and proper management can we preserve these invaluable natural areas for future generations and build a sustainable and balanced ecological future.

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