



WWF 2018 Living Planet Report:

### **Carpathian Mountains: significant losses in Europe's biodiversity hotspot**

The last few decades have seen a significant loss of habitats and species in the Carpathian Mountains, reflecting the dire picture of biodiversity worldwide that is painted in the WWF 2018 Living Planet Report (<https://www.worldwildlife.org/pages/living-planet-report-2018>) released on 30 October.

This year's edition of WWF's every-two-year report on the state of life on our planet makes for grim reading. Humans have wiped out 60% of wildlife populations in just 40 years. Species population declines have been especially dramatic in the tropics of Central and South America and the Caribbean, dropping by 89% since 1970. Meanwhile, the Palearctic realm that includes Europe has experienced a population drop of 31%.

The global situation is reflected in the Carpathian Mountains, one of Europe's biodiversity hotspots. The mountain range, which stretches across seven countries from the Czech Republic across Slovakia, Ukraine and Romania, and touching parts of Poland, Hungary and Serbia, is a European bastion for large carnivores, home to some 40% of the continent's population of brown bear and 30% of populations of wolves and lynx. The area, which is five times the size of Switzerland and larger than the Alps, also includes Europe's greatest remaining areas of virgin and old growth forests outside of northern Scandinavia and Russia.

Those treasures are threatened. "The high biological diversity of the Carpathians faces growing pressures," said Dr Lubos Halada, Deputy Director of the Institute for Landscape Ecology at the Slovak Academy of Science and a representative of Science for the Carpathians (S4C), an international group of scientists dedicated to studying the Carpathian Mountains.

"Intensive forest management, increased logging, altered natural disturbance regimes (wind, bark beetles), and climate change are negatively influencing Carpathian forest ecosystems", said Halada on behalf of Science for the Carpathians. "Never has there been a greater need for their protection and sustainable management. With expanding and widespread intensification of land use and infrastructure development, a growing challenge is to manage the Carpathians sustainably -- to maintain their biological diversity, to minimize fragmentation of natural ecosystems and to secure the ecological connectivity across the region's landscapes."

Halada points to the results of the Forum Carpathicum conference that recently took place on 15-18 October 2018 in Eger in Hungary (conference website: <http://fc2018.hu/>). The picture of the state of nature in the Carpathians painted by the natural and social scientists assembled at the gathering is disconcerting:

- The area of primeval forests has been dramatically decreasing in the Carpathians; this has strong and demonstrably negative effects on biodiversity. Measured data and model projections indicate significant changes in temperature and drought frequency, with considerable consequences to vegetation belts and the distribution and abundance of main forest types expected. Thus, a critical need is to anticipate future changes in forest composition, species distribution, and ecosystem service provisioning and to adapt forest management to shifting disturbance baselines caused by climate change. Both the conservation of protected areas (core zones, reserves) and ecologically sustainable forest management in production forests are very important for the conservation of forest biodiversity at landscape level.
- Windthrow events, drought, and bark beetle disturbances are broadly affecting Carpathian forests, especially spruce ecosystems. Salvage logging of blown down areas to limit subsequent bark beetle outbreaks consistently reduce the richness of wood-dependent taxa of lichens, beetles, fungi, and birds and can change the natural assemblage pattern.



- Protection of ecological corridors facilitating species migrations can help to mitigate some climate change vulnerabilities
- Landscape diversity has declined over time in the Carpathian region. This is true also to traditional agricultural landscapes that decreased in area significantly. They could be maintained as part of the green infrastructure.
- In the long-term perspective, almost every natural habitat type in the Carpathians has decreased to a remarkable extent. Meanwhile, secondary vegetation habitats show an increasing trend. More habitats were classified as critically endangered when calculated with long-term data (230 years) compared with short-term data. Longer-term datasets have helped recent changes in habitat loss to be better understood and interpreted.
- The Carpathians still support viable populations of large carnivores. However, increasingly pervasive infrastructure development presents challenges to maintaining connectivity among local populations and to avoid their fragmentation and isolation.
- Traditional knowledge is often rich but not well respected or considered in environmental management. Small-scale traditions (including small-scale farming and silvopastoral systems), often remain only in protected areas.
- Carpathian rivers have experienced considerable and complicated changes to their hydromorphological quality in the last century with consequences to water biota. Even though river restoration activities are still rare in the Carpathian region, they clearly demonstrate benefits for water management and the state of riparian communities.

The threats to nature in the Carpathians and beyond are also a direct threat to human welfare, livelihoods and wellbeing. The Carpathian Mountains are home to 18 million people. Many depend on the natural resources of the region for their livelihoods and well-being. Forestry, tourism and agriculture are important for local economies. More significantly perhaps, the region and its natural resources are significant for providing a host of ecosystem services, including climate regulation and water management.

In the Carpathians as worldwide, we are facing an existential challenge on par and related to that posed by climate change. We need to radically escalate the political relevance of nature and galvanize a cohesive movement across state and non-state actors to drive change, to ensure that public and private decision-makers understand that business as usual is not an option.

The **Living Planet Report** documents the state of the planet—including biodiversity, ecosystems, and demand on natural resources—and what it means for humans and wildlife. Published by WWF every two years, the report brings together a variety of research to provide a comprehensive view of the health of the Earth. <https://www.worldwildlife.org/pages/living-planet-report-2018>

**Science for the Carpathians:** Established in 2008, Science for the Carpathians (S4C) connects scientists interested in research in the Carpathian Mountains, defines research priorities for the region and enhances international collaboration with partners from outside the Carpathians. <http://carpathianscience.org/>

**WWF Danube-Carpathian Programme (WWF-DCP)** is responsible for leading and to a significant extent implementing WWF's efforts to preserve, restore and sustainably manage the natural values of the Danube-Carpathian ecoregion, which we call the Green Heart of Europe. <http://www.panda.org/dcpo>