



Species-rich, complex, and rare

Old and structurally-rich forests (with a more open canopy) are often regarded as important refuges for a wide range of threatened species. A combination of young, mature, and dead trees creates a particularly diverse habitat structure. Typical tree species include oak, beech, maple, ash, and hornbeam. Characteristic bird species are the middle spotted woodpecker, black woodpecker, grey-headed woodpecker, Tengmalm's owl, stock dove, wood warbler, and pied flycatcher. Mammals such as Bechstein's bat, hazel dormouse, and wildcat, as well as insects like the stag beetle and the hermit beetle, also find essential habitats here. Such forests have become rare today—they account for only about 0.7% or 14,000 km² of the total European forest area¹.



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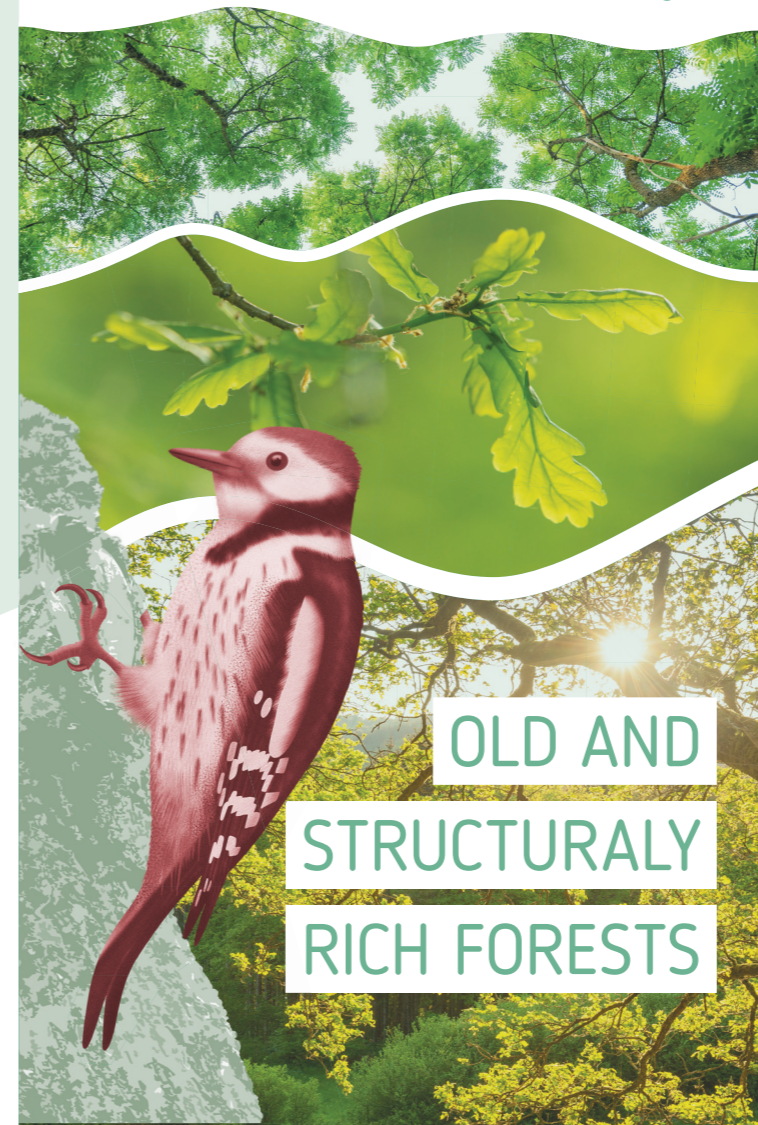
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Cultural and natural landscapes of the Siegerland



Deeply rooted in history - The cultural and natural landscapes of the Siegerland

Europe was once the continent of ancient and open canopy forests. For thousands of years, forests served as vital sources of food, medicinal plants, and building materials for humans. Even the Germanic peoples attributed special natural properties to old trees—something that later stood in contrast to the spread of Christianity. Initially through the felling of trees with spiritual significance, the ever-growing demand for timber during the Middle Ages eventually led to extensive overexploitation of the forests. Old trees disappeared, forest cover in Europe declined, and the increasingly open landscapes were converted into farmland and settlements.

The first concept of “sustainability” emerged as a response to this visible decline: in 1713, Hans Carl von Carlowitz pointed out that forests were severely overused and established the principle of managing resources so that future timber yields would be secured through responsible use today. Old and open canopy forests survived only in a few regions and thus became relics of an ancient landscape. Today, we recognize such forests as primeval or natural forest reserves, acknowledging not only their immense ecological value for biodiversity but also their role as part of our cultural heritage.



Ecologically valuable

As one of Europe's widespread natural vegetation and owing to a long history of extensive use, many species in forests have adapted to coexistence with humans. In contrast, in intensively used landscapes—such as arable land or settlement areas—only few species have been able to keep pace with the rapid changes caused by human activity. Old and open canopy forests therefore became important refuges for original species assemblages and for species less capable of adaptation. Today, the last remnants of old and structurally-rich forests are home to particularly vulnerable and conservation-dependent species². A major reason for this is the high structural complexity and abundance of microhabitats, resulting from a mixed tree composition and the coexistence of young, mature, and dead trees, along with the predominance of natural decay and regeneration processes.



Economically significant?

At first glance, old and structurally rich forests often appear as untidy land. Yet for centuries, they served as important sources of food and building materials. However, they only partially meet the demands of modern forestry. The value of forests, though, cannot be measured solely in economic or silvicultural terms. Old and open canopy forests provide a wide range of essential ecosystem services from which humans benefit in various ways. These include not only the provision of habitats for endangered species, but also carbon sequestration, regulation of the water balance and local climate, production of oxygen and clean water, and their intangible value as destinations for recreation, relaxation, and as part of our cultural heritage. Beyond direct financial gain, old and open canopy forests surpass intensively managed forests in all of these dimensions³.



STAG BEETLE >

Resilient

Human influence has shaped the appearance of Europe's forests throughout history. Silvicultural practices and the focus on a limited number of tree species, management types, and uniform age structures have made forests more vulnerable to pests and diseases (e.g. forest dieback in the 1980s, current spruce decline). These developments illustrate how unexpected events can have significant impacts on forest ecosystems.

In contrast, old and structurally rich forests are not tied to a specific stand age. They contain trees and shrubs of all age classes, allowing natural regeneration to occur from the seed bank whenever canopy openings form. This high species diversity provides remarkable adaptive capacity to external influences. For example, if one species disappears (e.g. due to ash dieback, Dutch elm disease, or outbreaks of weevils and bark beetles^{4,5}), the resulting gap is quickly filled by other species—ensuring the persistence of the forest as an ecosystem. A greater variety of species and age structures therefore provides multiple pathways for forests to adapt to changing environmental conditions.



WOOD WARBLER >



The LIFE4Siegerlandscapes project focuses on the conservation of cultural landscapes in the southern Siegerland and implements targeted measures both in open landscapes and in forests. In the forest areas of the EU Special Protection Area “Wälder und Wiesen bei Burbach und Neunkirchen”, 60 ha of former spruce stands are being converted back to deciduous forest, 50 ha of deciduous forest are being secured as old-growth, and a further 100 individual trees are being permanently protected as special habitat trees and microhabitats.



The LIFE Programme of the European Commission has been financing nature conservation projects within the EU since 1992, with a particular focus on the conservation and enhancement of the EU-wide Natura 2000 network of Special Protection Areas and Special Areas of Conservation designated under the Birds and Habitats Directives.

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