

# Inspiration Book for Awareness Raising About Old-Growth Forests

Communication strategies  
and case studies







## ACKNOWLEDGEMENTS

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# TABLE OF CONTENT

<b>EXECUTIVE SUMMARY</b>	<b>4</b>
<b>1. INTRODUCTION</b>	<b>5</b>
1.1. WHAT IS THE PURPOSE OF THIS INSPIRATION BOOK?	6
1.2. WHO CAN USE THIS INSPIRATION BOOK?	7
1.3. WHO MADE THIS INSPIRATION BOOK?	8
<b>2. COMMUNICATION MESSAGE</b>	<b>9</b>
2.1. WHAT IS AN OLD-GROWTH FOREST?	10
2.2. WHY ARE OLD-GROWTH BEECH FORESTS IMPORTANT?	11
2.3. WHY IS OLD-GROWTH FOREST PROTECTION IMPORTANT?	15
2.4. WHERE ARE THE EUROPEAN OLD-GROWTH FORESTS?	16
2.3. KEY MESSAGES	20
<b>3. CRITICAL FACTORS INFLUENCING BEHAVIOURAL CHANGE</b>	<b>21</b>
3.1. HOW TO BECOME AN ENVIRONMENTALIST?	22
3.2. KEY TAKE AWAYS	26
<b>4. SURVEYS</b>	<b>27</b>
4.1. KEY INSIGHTS	28
<b>5. CASE STUDIES</b>	<b>29</b>
5.1. A VIRTUAL CONNECTION	30
5.1.1. <i>Social media and websites – Sonian Forest Foundation, Belgium</i>	30
5.1.2. <i>Press releases – National Park Kalkalpen, Austria</i>	32
5.1.3. <i>Adopt a beech tree - Paklenica National Park, Croatia</i>	34
5.2. AWAY FROM OUR SCREENS, BUT NOT IN THE FOREST YE	37
5.2.1. <i>Branded merchandise – Central Balkan National Park, Bulgaria</i>	37
5.2.2. <i>Information stand at the yearly city fair - City of Angermünde, Germany</i>	38
5.2.3. <i>Information stand at children's day and hand-out for teachers City of Angermünde, Germany</i>	39
5.2.4. <i>Equipment for local guides – City of Angermünde, Germany</i>	42
5.2.5. <i>Meeting with local communities – Carpathian Biosphere Reserve, Ukraine</i>	44
5.2.6. <i>Expert workshop at national level – University of Ljubljana and Ministry of Environment and Spatial Planning, Slovenia</i>	46
5.2.7. <i>Virtual walk – Abruzzo, Lazio, and Molise National Park, Italy</i>	48
5.2.8. <i>New Year's Concert Riha film "Austria's World Heritage Sites" – National Park Kalkalpen, Austria</i>	51
5.2.9. <i>Theatre show – Abruzzo, Lazio, and Molise National Park, Italy</i>	52
5.3. INTO THE OLD-GROWTH FOREST	54
5.3.1. <i>Educational excursions</i>	54
5.3.2. <i>World Heritage Day - National Park Kalkalpen, Austria</i>	62
5.3.3. <i>European day of the primeval and old-growth forests – Sonian Forest Foundation, Belgium</i>	64
5.3.4. <i>International World Heritage Youth Gathering – City of Angermünde, Germany</i>	68
5.3.5. <i>Yearly programme for local school partnerships</i>	69
5.3.6. <i>Bilateral international exchange for schools – City of Angermunde, Germany &amp; Paclenika National Park, Croatia</i>	72
5.3.7. <i>Educational Week for schools – City of Angermunde, Germany</i>	74
<b>6. INVENTORY</b>	<b>77</b>
6.1. INFORMATION ABOUT OLD-GROWTH FORESTS IN EUROPE	78
6.2. PUBLICATIONS ABOUT AWARENESS RAISING AND SCIENTIFIC OUTREACH	80
6.3. RELEVANT EUROPEAN STRATEGIES AND GUIDELINES	82
<b>7. REFERENCE LIST</b>	<b>85</b>

## EXECUTIVE SUMMARY

Old-growth forests in Europe are of utmost importance for biodiversity conservation and many other ecosystem services. They are rare, fragmented and fragile. Their protection is an urgent matter that should be firmly embedded in the national and international legislative framework.

The support of local communities and other stakeholders is essential to the successful implementation of protective measures. Awareness raising can help to create a support base by connecting local communities and other stakeholders with the forest and informing them about the forest in many different ways.

This inspiration book is created for those who develop and conduct activities to connect people with protected natural areas in general. The book comprises the story behind the emergence of old-growth forests in Europe, the processes that result in their important and unique ecosystem services, and the key messages related to this that should be central in the communication strategy. Furthermore, this 'inspiration book' offers insights into the factors that drive people to behave in one way or another, which is crucial to the development of any successful awareness-raising strategy. The core of the book consists of the numerous case studies that have been developed, tested, and described in detail by the partners of the Life Prognoses project. Their expertise is hereby made available for everyone who wants to spread the old-growth forest message.



Figure 1: Overview of the component parts of the UNESCO World Heritage site "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe" ("European Beech Forests - Our Beech Forest Family" n.d.).



# Introduction

1



### 1.1. What is the purpose of this inspiration book?

Preserving and enhancing the forest's health and well-being can only partially be achieved through best practices directed towards the forest in itself. Natural areas attract visitors who value the benefits of passing time in nature. Their presence may impair the functioning of the forest ecosystem if they are not incentivized to consider the well-being of this fragile habitat and its inhabitants. Taking care of protected sites includes reaching out to the visitors and incentivising them to display the conduct that benefits the protected site. Awareness-raising methods can be a valuable tool in people management. These methods aim to convey knowledge and provide experiences that should induce a willingness to adopt good conduct. Hereby, visitors can help to protect the ecosystem and alleviate the pressures on the forest that are related to their presence.

Ecosystems create benefits for people, such as food and wood production, water purification, climate regulation, and recreational activities. Furthermore, old-growth forests form particular ecosystems of great cultural and historical importance that provide specific ecosystem services of high quality. The broader public should be informed about what old-growth forests are, about their value, and their protection status. This can be done in different ways, e.g. through an educational path where experts communicate with the public, during guided tours, on school trips where children are especially encouraged to get acquainted with nature, during debates between different stakeholders, etc.

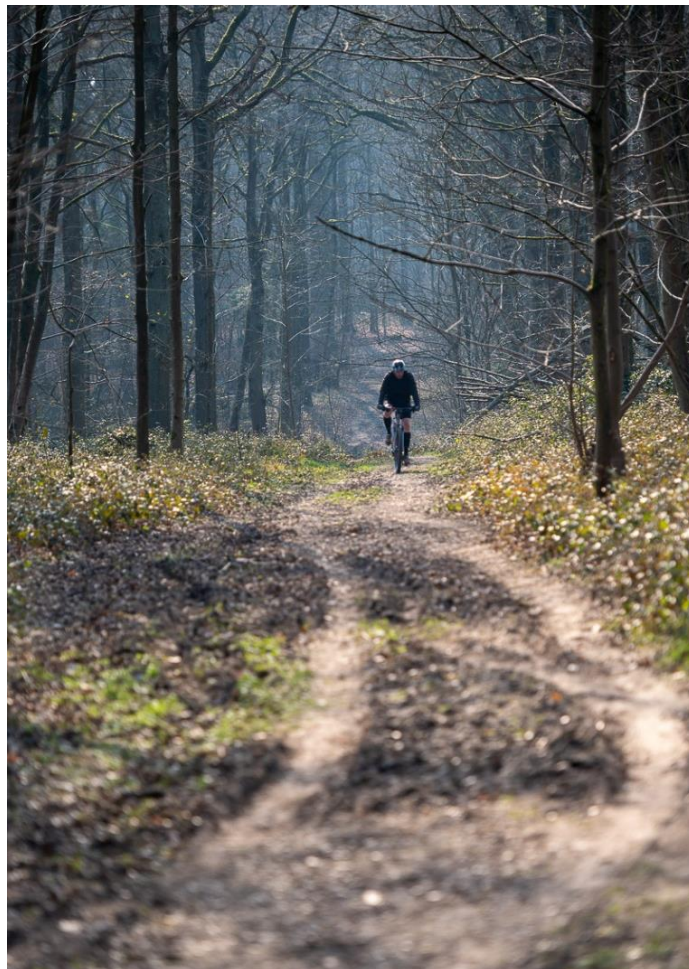


Figure 2: a mountainbiker in the Sonian Forest, Belgium. © Thierry Lampe.



Messages that incentivize good conduct are given at a local level, tailored to the context of a particular protected area. However, the methods can work in other places as well. This inspiration book provides an overview of how messages can be conveyed illustrated with case studies of multiple European countries. Communication strategies and activities for a broad public or specific target groups will be described based on the experience of the partners and members of the World Heritage Site *Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe*.



Figure 3: Forests belonging to the serial World Heritage Site *Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe*.

## 1.2. Who can use this inspiration book?

This inspiration book is in the first place meant to inspire everyone who wants to convey a message and organise an activity to involve a broader public in the protection of old-growth forests. The use of the inspiration book goes beyond old-growth forests per se: everyone who wants to organise an activity related to protected natural sites can find something useful here.



Figure 4: excursion group in Central Balkan National Park. © Central Balkan National Park

### 1.3. Who made this inspiration book?

This inspiration book has been made in the context of the Life PROGNOSSES (Life PROGNOSSES 2020) project. Life PROGNOSSES is a preparatory project funded by the European Commission. The project aims to provide a set of prerequisites for the strict protection of the European old-growth forests as articulated in the *European Biodiversity Strategy for 2030* (European Commission 2020). Besides contributing to a definition of and indicators for old-growth forests and assessing several ecosystem services, Life PROGNOSSES comprises a work package entirely devoted to awareness-raising. The project team consists of fifteen partners spread over eight European countries, among them are national park directorates, ministries, city administrations, universities and research centres. The methods that are developed by the project members are drawing inspiration and data from component parts of the World Heritage Site *Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe* (World Heritage Committee 2017).







# Communication message

2

## 2.1. What is an old-growth forest?

The Directorate-General for Environment of the European Commission accepted the following definition of old-growth forest:

'A forest stand or area consisting of native tree species that have developed, predominantly through natural processes, structures and dynamics normally associated with late-seral developmental phases in primary or undisturbed forests of the same type. Signs of former human activities may be visible, but they are gradually disappearing or too limited to significantly disturb natural processes' (Directorate-General for Environment (European Commission) 2023b).

An old-growth forest is not the same as an ancient forest or a primary forest. Ancient forests have been under continuous forest cover in time (forest continuity), which does not have to be the case for an old-growth forest. Moreover, ancient forests can be in an early development phase, while old-growth forests are mature to overmature forests. Primary forests are naturally (re)generated forests. This is not necessarily the case for old-growth forests. Just like ancient forests, primary forests can be young, lacking the structural aspects that are characteristic of old-growth forests.

Old-growth forests are typically composed of native species, contain significant amounts of laying and standing deadwood, and have a certain number of old or large trees in their tree composition. Other characteristics are a certain degree of structural complexity – the vertically subsequent patches of vegetation, the horizontal layers of vegetation and the relief of the soil – the presence of habitat trees, and the presence of indicator species for late-seral developmental phases of primary forests.

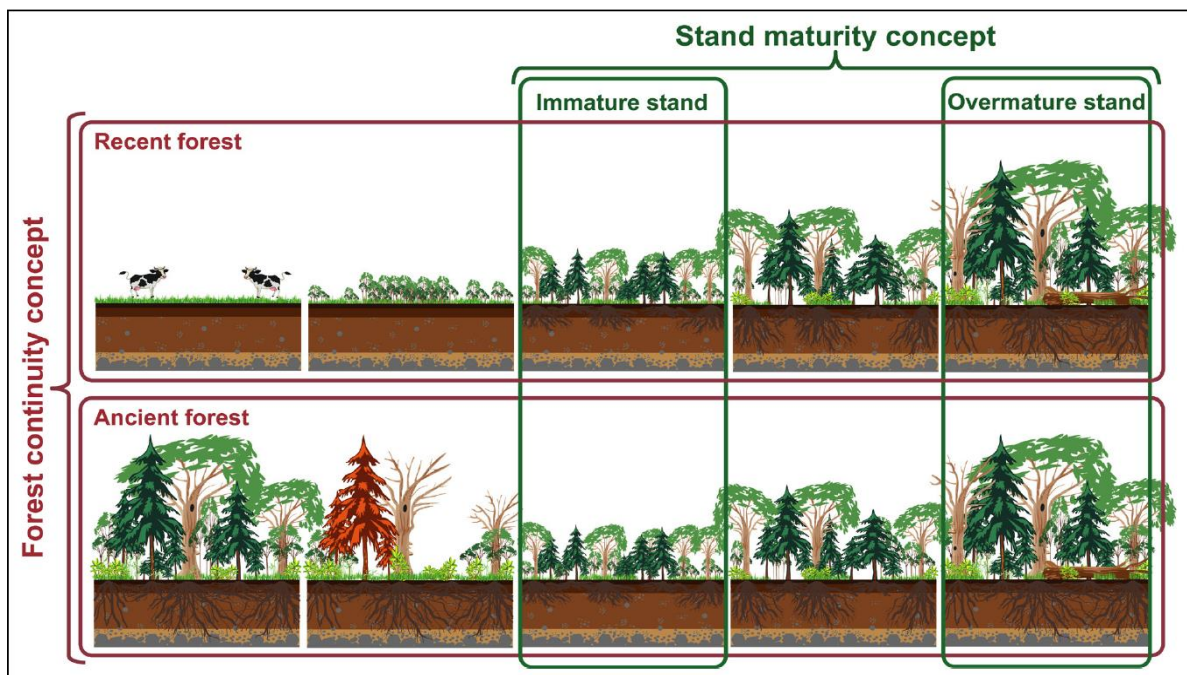


Figure 5: Depiction of the difference between forest continuity and stand maturity. Old-growth forests are mature and overmature forests, but continuity is not required. Ancient forests on the other hand have been under continuous forest cover but can be young because of a recent collapse and regeneration phase. © Janssen et al. 2019 – FEE.2087.





## 2.2. Why are old-growth beech forests important?<sup>1</sup>

Retaining a continuous forest cover is important for a healthy forest ecosystem and the provision of ecosystem services. Because of their processes, dynamics, and structures that resemble those of late-seral phases of primary forests, old-growth forests provide a wide range of specific ecosystem services. These ecosystem services emerge with high quality compared to their counterparts under management.

### 2.2.1. What are ecosystem services?

Ecosystem services are all the benefits that humanity derives from ecosystems. In other words: humans concretely benefit from the presence of forests. Ecosystem services are divided into three groups: provisioning, regulatory, and cultural ecosystem services. These services include both biotic and abiotic ecosystem outputs, the former related to living organisms and the latter not related to living organisms. Some examples of key ecosystem services are biodiversity development and conservation, carbon sequestration, watershed services (protection and enhancement of water supplies), soil conservation, recreation, cultural values, social and economic benefits for communities, and high conservation value.

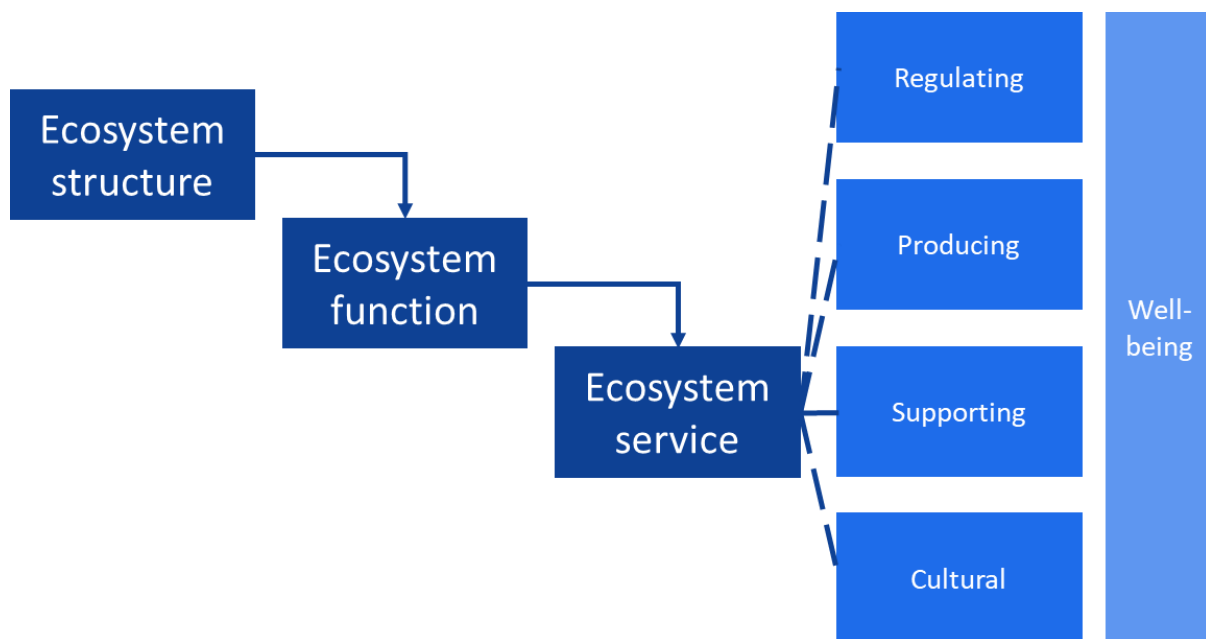


Figure 6: Ecosystem services are the result of ecosystem functioning that emerges from the particular structure of an ecosystem. Ecosystem services can be categorized according to the type of service they deliver: regulating, producing, supporting, and cultural services. Together, these services contribute to human well-being.

<sup>1</sup> This chapter is entirely based on the JRC Science for Policy Report Mapping and Assessment of Primary and Old-growth Forests in Europe (Barredo et al. 2021).

### 2.2.2. Biodiversity in old-growth forests

Although they occupy a very limited area in Europe, old-growth forests are irreplaceable for the conservation of European biodiversity. They provide particular habitats such as those that are related to deadwood (e.g. lying deadwood, cavities in standing trunks etc.). The flora and fauna they harbour are highly specialized and very dependent on the typical old-growth forest structures, those that make us think of the late-seral stages of primary forests. The great diversity of environments and habitats found in beech forest ecosystems are true treasure troves of biodiversity. These forests have exceptional value for the reconstruction of the climatic history of the areas where they arose and of the communities that live there.



Figure 7: The *Rosalia longicorn* (*Rosalia alpina*) in Kalkalpen National Park. It is a typical species for habitats with a lot of dead wood, more specifically, old-growth forests. The beetle is included in the Life Prognoses logo. © Maximilian Wögerer.



### 2.2.3. Climate regulation in old-growth forests

Old-growth forests play an essential role in climate regulation. The complex structure of these forests forms a robust buffer against extreme environmental events such as droughts. During summer, old-growth forests stay significantly cooler and more humid hereby staying better within the tolerance ranges of the species they harbour. They mitigate climate change and reduce disaster risk because of their buffering capacity.

### 2.2.4. Nutrient cycling in old-growth forests

Old-growth forests play a key role in nutrient cycling and the hydrological cycle providing clean water and mitigating floods. A large forest can influence the water cycle of a particular area and the consequent availability and quality of water. Water that settles on the ground is absorbed by the root system of the trees and transported through the various vessels in the tree trunk and branches up to the leaves where the transpiration processes release the water back into the atmosphere. In periods of drought and water shortage, trees can use the water stored in the soil to survive. These forests are creating constant and favourable environmental conditions, which indirectly influence cloud formation and precipitation on a larger climatic scale. Deep forest soils rich in organic matter maintain a constant humidity around the root systems creating an important habitat for various soil organisms such as bacteria, fungi, and invertebrates. These soil organisms, in turn, participate in the decomposition and recycling processes of organic matter and provide support services for biodiversity and habitat formation.

### 2.2.5. Mitigation of extreme events and reduced risk in old-growth forests

The water-accumulating capacity of natural forest ecosystems underlies their important role in limiting hydrogeological risk, slowing down the flow of water during heavy rainfall, and avoiding or reducing the risk of dangerous floods. Similarly, the presence of a dense tree cover is essential in limiting erosion and any avalanches and snow slides. Even after they die, the trees mechanically retain the snow, which melts more slowly in the forest, thanks in part to the shade they provide. In this way, the water from the melting snow is gradually absorbed by the soil and given off slowly to streams and rivers that flow to the valley floor, thus ensuring the long-term supply of water.

### 2.2.6. Carbon storage and sequestration in old-growth forests

Old-growth forests form a significant carbon sink by absorbing carbon dioxide (CO<sub>2</sub>), a greenhouse gas, from the atmosphere. Through this process called photosynthesis, carbon dioxide and water are converted into organic molecules, forming the living biomass, and oxygen gas that is released into the atmosphere. Without plants, the composition of the atmosphere would be very different and animals – including humans – would not exist. Forest protection is an important way to prevent a further accumulation of greenhouse gasses in the atmosphere.

Besides converting CO<sub>2</sub> and storing significant amounts of carbon in their aboveground and belowground biomass, the soil accumulates carbon as well over the years through nutrient cycling following the decay of the biomass that remains in the forest after dieoff. These processes result in vast terrestrial carbon stocks. Old-growth forests stabilise terrestrial carbon and form important carbon sinks.

### 2.2.7. Recreation, tourism, and public health in old-growth forests

Old-growth forests provide public health benefits and opportunities for recreation and tourism. The beauty of healthy forests can significantly benefit both our mental and physical health and is considered an ecosystem service as well.



Figure 8: excursion with visitors in the Carpathian Biosphere Reserve, Ukraine. © Vasyl Pokynchereda.

### 2.2.8. The role of old-growth forests in times of climate change

In recent decades, our world is going through a period of environmental changes caused by human activities. This includes the introduction of exotic species and large-scale land-use changes, carbon emissions, and forest harvesting or burning. Forests play a major role in making sure the earth remains a habitable planet, especially in the context of radical environmental change and global warming.

Although forests are part of the solution, climate change is causing concern worldwide for forest dieback (forest mortality) and reduced forest growth due to drought phenomena. In addition, European forests are also affected by a series of storms, widespread forest fires, rapidly spreading bark beetle infestations and various other pest and disease outbreaks. Such events will shift in terms of frequency and intensity due to climate change. As climate warming accelerates, the limits of species tolerance to long-term extreme events remain uncertain. This results in the alteration of forest ecosystems and their services, including human amenities.

Old-growth forests have shown to be more resilient concerning these external disturbances than managed forests, such as plantations. This resilience is highly depending on the size and the surrounding environment, underlining the importance of the protection of old-growth forests.



Forests are complex systems that network with thousands of species and possess important ecological functions such as microclimate regulation, enabling water retention, and thermodynamic efficiency. External factors on top of global warming can accelerate and amplify the decline of forests or promote their healthy functioning. Therefore, forest management should be evaluated more thoroughly and the concepts and findings of conservation biology, ecosystem theory and systems ecology should be taken into account.

### **2.3. Why is old-growth forest protection important?<sup>2</sup>**

European forests have an adaptive capacity where trees will recover when extreme events occur, but with the increase and more frequent extreme events taking place, current forests may reach the limits of this adaptive capacity. Although they will certainly undergo changes due to the changing circumstances, old-growth forests are likely to be highly resilient. Such ecosystems have to be protected and restored to ensure a sustainable future.

#### **2.3.1. How to conserve old-growth forests?**

The conservation of forest ecosystems requires the presence of all stages of succession (from pioneer stages to mature trees and to the decomposition stage). To conserve old-growth forests, the structure and dynamics of the forest have to be taken into account (which stages of succession are present in which part of the forest, how will species evolve on a parcel in the future, what is the link between the conditions and the species,...). It is also important to pay attention to the restoration of the ecological processes and biodiversity of old-growth forests. Making society aware of the important values of old-growth forests is a must to protect and preserve these forests, as well as telling the public the reasons for the chosen management (for example, why dead wood is left in the forest).

#### **2.3.2. Taking care of old-growth forests through passive and active management**

The structure of old-growth forests can be restored by passive or active rewilding and/or restoration.

Passive management means that nature takes its course and changes in forest development and structure depend on natural disturbances without any human intervention. The natural changes and developments that the forest goes through over time are determined by the intensity, type and frequency of the natural disturbance. Examples of these disturbing events are snowstorms, windstorms, insect outbreaks, etc. As a result, the structure of an old-growth forest can be formed with features such as standing dead trees, holes in the forest, downed tree trunks on the forest floor and pits and mounds from fallen trees. Depending on the characteristics of the original forest (naturalness level and previous management, fertility,...) passive management can take up from decades to centuries before the structure changes.

In active management, human intervention is required to form the old-growth forest structure. Careful planning aims to direct the development of standing dead trees, larger trees, diversity in tree sizes, different tree crowns and fallen trunks over time. Processes happen in a natural way (trees grow, die-off, their trunks form standing deadwood or fall in the forest,...) while management interventions give direction

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<sup>2</sup> This chapter is entirely based on the JRC Science for Policy Report Mapping and Assessment of Primary and Old-growth Forests in Europe (Barredo et al. 2021).



towards the desired outcome, often by creating deadwood and a multi-age structure. This structure goes hand in hand with timber management, which is important for economic value. Forest management attempts to mimic natural disturbance to create old-growth forest characteristics. Active management impacts ecosystem functioning and is preferred for the restoration of degraded forest systems rather than in a conservation plan. Although some trees are felled in active management, old trees are identified and remain in the canopy as they serve the old-growth forest structure and form an important habitat.

## 2.4. Where are the European old-growth forests?<sup>3</sup>

### 2.4.1. A small history of European forest development

#### *Europe was covered by forests*

During the Quaternary (2,58 million years ago to the present), forest development increased dramatically. During the current geological period, cold times alternated with warmer times – respectively glacial and interglacial periods, which resulted in shifts of forest vegetation from the north to the south. The trees that always appear first are pine and birch, called pioneer tree species, followed by various other tree species. Estimations show that in the first half of the Holocene, which is the interglacial period starting about 11.700 years ago and lasting till the present day, the forest cover was above eighty per cent in certain European regions. Without human intervention, Europe would now have been largely covered with primeval forests still.

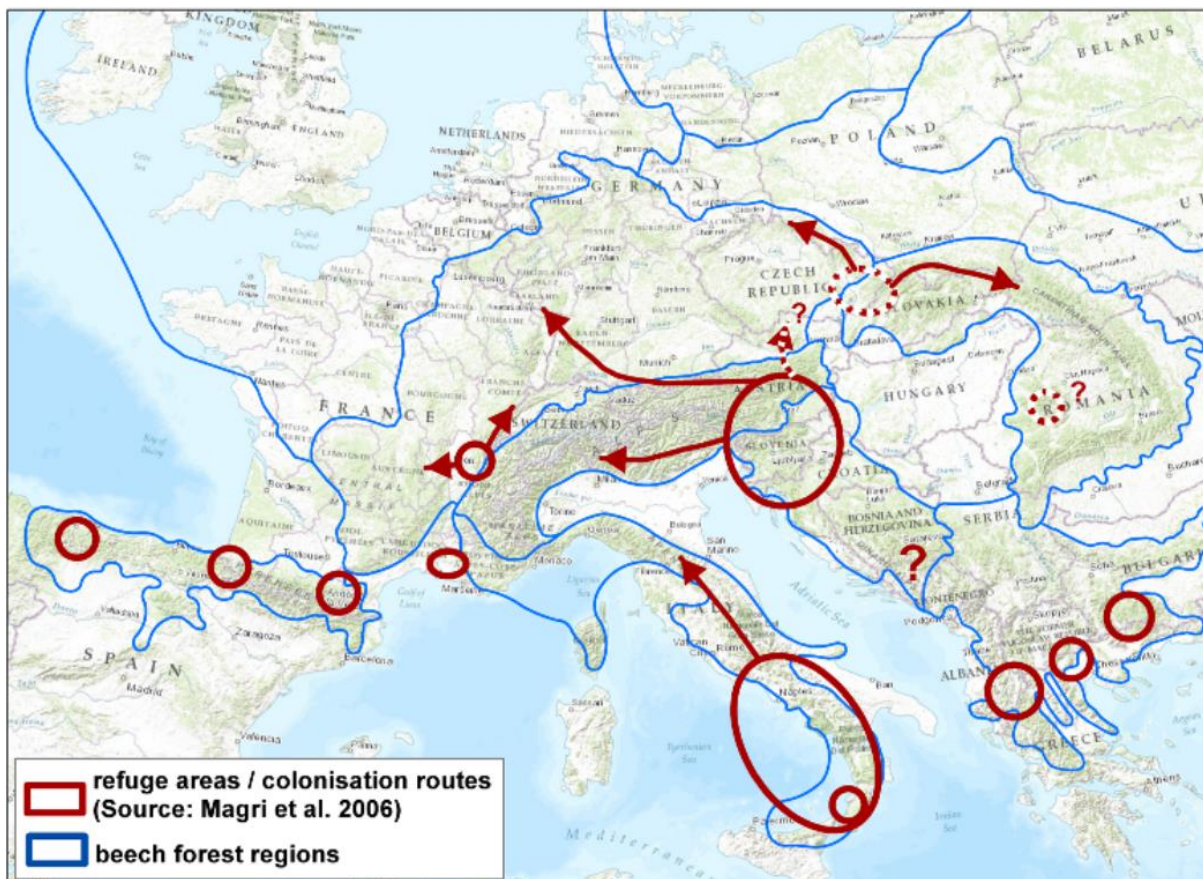


Figure 9: Refugia and colonisation pathways of the beech during and after the last glacial period (2,58 million years ago).

<sup>3</sup> This chapter is entirely based on the JRC Science for Policy Report Mapping and Assessment of Primary and Old-growth Forests in Europe (Barredo et al. 2021).

***Deforestation for the sake of human needs...***

Deforestation started at least in the Bronze Age. In the decennia from then on, multiple waves of deforestation occurred. Still, the scope was such that old-growth forests largely persisted.

With population growth, industrialization, the rise of agriculture and cattle breeding and the further intensification of land use, man's influence on old-growth forests has continued to increase. Forests were increasingly exploited for cropland, pasture, sources of building material and fuel.

***...results in the forest cover and quality we know today***

The influence of man creates a changeable environment with higher chances of tree mortality due to, among other things, the felling of trees, higher chances of fire, pollution etc. Nowadays, forests with trees older than 200 years are scarce.

Primeval forests that have developed in the complete absence of human influence are extremely rare in Europe. The concept of old-growth forests demarcates forests that have developed and are maintained with very limited human influence. This implies the soil has not been tilled and the living elements (plants, animals) have not been introduced, planted or sown by man. These living elements consist exclusively of native species with trees of all ages from seedlings to old and large trees. In Europe, only small areas can still be considered old-growth forests, including the old European forest remnants. These forest complexes show the most complete and complex ecological patterns, including beech (*Fagus sylvatica*) under a variety of environmental conditions.

Old-growth forests, developed with limited human intervention, are rare, small and fragmented. According to the World Database on Protected areas, worldwide, there remains 11.1 million km<sup>2</sup> of old-growth forests, of which 61% are located in Canada, Brazil and Russia. In 2009 only 21% of the original old-growth forests could be found all over the world. Of these, 35% are found in South America in the Amazon rainforest in Brazil; 28% in North America, especially Canada and Alaska; and 19% in North Asia, where the world's largest boreal forest is located. In addition, only 8% is found in Africa, partly due to the timber industry. Then 7% in South Asia-Pacific where the forests are being destroyed at the highest rate compared to any other ecosystem in the world. Finally, Europe has less than 3% of the world's remaining old-growth forests and more than 150 km<sup>2</sup> are being cleared each year.

**2.4.2. World Heritage Site *Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe***

The World Heritage Site *Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe* is currently the largest serial World Heritage property. With 94 sites in 18 countries, it is the only World Heritage Site globally that comprises so many component parts. It covers areas in Albania, Austria, Belgium, Bosnia & Herzegovina, Bulgaria, France, Germany, Italy, Croatia, Czechia, North Macedonia, Poland, Romania, the Slovak Republic, Slovenia, Spain, Switzerland, and Ukraine. This requires collaboration across boundaries and illustrates the close relationship of the beech forest with European culture. Each area is globally unique in its composition of climate, soils, flora, and fauna. The European Beech is exceptionally adaptable to different climatic, geographical, and physical conditions. It is a very competitive species and asserts itself almost everywhere: from rich calcareous to nutrient-poor sandy soils, from mountains to lowlands, and from humid to dry conditions. Our World Heritage Site reflects nearly the entire spectrum of beech forest types from the



mountains to the sea. In Europe, a distinction is made between 86 beech forest types in 36 geographical variants (Figure 3) (World Heritage Committee 2017).



Figure 10: Geoclimatic regions comprised by the beech forest world heritage series ("European Beech Forests - Our Beech Forest Family" n.d.).

Also, globally unique is the expansion history of the beech. Its success story began 12,000 years ago, at the end of the last glacial period. Back then, a thick layer of ice-covered large sections of Europe. Beech forests had only survived as small remnants in Southern Europe. When the ice melted, the beech began to expand northwards from its isolated refuge areas in the South. This process is still ongoing today, even though the ice age is long gone. This phenomenon, the re-colonisation of large sections of a continent by a single tree species and the still ongoing expansion of the European beech, is globally unique (World Heritage Committee 2017).

#### 2.4.3. The European Biodiversity Strategy for 2030

The new EU Forestry Strategy 2030 aims at an improvement of the quantity and quality of European forests. It is an initiative of the European Green Deal and builds on the EU Biodiversity Strategy 2030. The strategy is part of the 'Fit for 55 Package' where the objective is to 'reduce greenhouse gas emissions by at least 55% by 2030 and become climate neutral by 2050'. The multifunctional role of forests, the contribution of foresters and the entire forest value chain are important for sustaining life on earth. To protect and preserve this core, a sustainable and climate-neutral economy must be achieved by 2050 (European Commission 2020).

The EU Biodiversity Strategy 2030 proposes the protection (in space and time) of the last old-growth forests in the EU. The target is to protect at least 30% of the EU's land area and to have an effective management regime in place. Of the 30%, 10% of the land area must be under strict protection. Within this 10%, all of Europe's old-growth forests, estimated less than 3% of the forested surface, should be included (European

Commission 2020; Directorate-General for Agriculture and Rural Development (European Commission) 2021). In March 2023, the *Commission Guidelines for Defining, Mapping, Monitoring and Strictly Protecting EU Primary and Old-Growth Forests* were published, encompassing the definition and indicators of old-growth forest (Directorate-General for Environment (European Commission) 2023b).

The European guidelines will have to be implemented at the national level of each European country. The member states will develop a national methodology to identify and map primary and old-growth forests based on the guidelines by 2025. The strict protection of the identified forests is expected to be established by 2029 (Directorate-General for Environment (European Commission) 2023b).





## Key messages

- Old-growth forests in Europe are rare, small and fragmented.
- The dominant type of natural ecosystem in Europe is the forest ecosystem. In Western, Central, and South-Eastern Europe, the prevalent forest systems are dominated by beech (*Fagus sylvatica*). Without human intervention, Europe would have been completely covered with old-growth forests.
- Old-growth forests are important for biodiversity conservation
- Forests with trees older than 200 years are scarce. However, these forests provide numerous habitats for indigenous animal and plant species and undergo several complex life cycles with, among others, soil fauna and fungi.
- It is estimated that 20 to 40% of living organisms in a forest depend on dead wood during at least one part of their lifecycle.
- Old-growth beech forests create their own microclimate: they provide a cool shelter during hot summer days.
- Forests play a key role in the global carbon cycle, extracting carbon dioxide (CO<sub>2</sub>) from the atmosphere and incorporating it into tree and soil biomass.
- Old-growth forests are important for recreation and tourism
- Forest ecosystems play a crucial role worldwide in building and maintaining soil fertility. The roots of trees take nutrients from the soil, allowing trees to grow and develop.
- Old-growth forests are an important element in the hydrological cycle with associated filtration, regulation, regeneration and absorption functions.
- Forests play an important role in disaster reduction: they act as a natural buffer against extreme weather conditions and rapid changes in their surroundings.





# Critical factors influencing behavioural change

3



### 3.1. How to become an environmentalist?<sup>4</sup>

On a stroll through the forest, we come across a person who carefully collects the littered trash of the ones who walked there before. Just a couple of minutes later, we see another person dropping the butt of a cigarette carelessly on the winding path. We try our utmost best to incentivize the behaviour the first person exhibits, or at least to incentivize refraining from all that is explicitly prohibited, such as smoking in this forest, let alone littering cigarette butts... At the sight of this, our efforts might seem to be in vain and we may wonder why it is so hard to adopt the good conduct we promote. Many studies have been conducted to answer this question. The answers provided could help us to effectively convey messages to the people who visit the protected area.



Several factors determining pro-environmental behaviour have been identified. Here you can find a summary.

#### 3.1.1. Values



Values can be seen as the expressible counterparts of our most rudimentary needs, closely linked to the type of species human beings are. They are concepts that express what to pursue to maintain ourselves as individuals and to guarantee the smooth functioning of the societies we form. Therefore, values exist along a broad spectrum ranging from self-enhancement values to community-minded values, and from conservative values to values that express an openness to change and exploration. Values tend to be ranked, some more important to pursue than others depending on the circumstances in which a culture, society, and individual are embedded. A shift in values, or their

relative importance, can occur. This usually happens in response to circumstantial

<sup>4</sup> This chapter is based on research by Liobikienė and Poškus 2019; Dunlap et al. 2000; Stern 2000; Stern et al. 1999; S. H. Schwartz 2012; Dunlap and Van Liere 2008; S. Schwartz 1977; 2010; Ajzen 1991; Fornara et al. 2020; Schultz and Zelezny 2003; Liburd and Becken 2017; Meistrup and Klitmøller 2023; Kaiser, Hübner, and Bogner 2005; Kollmuss and Agyeman 2002; Manfreda, Teel, and Dietsch 2016; Kiatkawsin and Han 2017; Manfreda et al. 2017).

changes that impact the life of the individuals significantly and call for a change in their approach to life.

Given their high circumstantial dependence, the idea of inducing a value shift anticipating radically different circumstances (such as the consequences of climate change) is not straightforward at all. Engineering a value shift to drive people to pro-environmental behaviour is rather idealistic. Rather than trying hard to change people's established values, we can frame our messages in terms of the values of our audience. By appealing to their values, the message will be more impactful.

### 3.1.2. Beliefs

A set of fundamental beliefs forms the worldview of a person. Examples of such beliefs are that human beings are the highest species on earth and rule over nature, that human beings are one among many species mutually relying on one another in a complex ecosystem, or that nature is sacred. Some beliefs are more concrete and circumstantial and are formed based on fundamental beliefs. Examples are the belief that human beings need to eat meat, that we need other species to survive in more ways than only as a source of nutrition, or that trees are meant to be used as a source of wood for us.



Sometimes, we hold beliefs that are based on outdated knowledge or that are simply wrong. If such beliefs influence our actions, we might think we are doing something good for the environment while the opposite is true or the alternatives are actually better. This shows how an environmentally beneficial intention does not necessarily result in an environmentally significant action. An example is avoiding purchasing aerosol cans based on the belief that they contain chlorofluorocarbons (CFCs) that destroy the ozone layer. However, at least in Europe, these CFCs have been banned from such cans since 1989, except in some very specific cases such as asthma inhalators. (Note: although the CFC problem has largely been solved, this is in no way a manifesto to pursue aerosol cans, there are other good reasons to avoid them.)

### 3.1.3. Attitude and personal norms



Influenced by values and fundamental beliefs we hold, we regard certain actions and behaviours as good or bad. This attitude informs our personal norms, the expectations we have of ourselves, assuming we want to act in the ways we regard good.

Norms are said to be 'activated' depending on whether we have a notion of the consequences of a certain situation, whether we attribute



responsibility to ourselves, and whether we believe in our capacity to influence the situation.

It is clear then that to act according to a personal norm, people need to be aware of the situation first and need to see how their behaviour will effectively impact the situation.

#### 3.1.4. Perceived control and probability

This factor has been mentioned in relation to personal norms. Someone must perceive an ability to impact a situation through certain actions. If we would believe all possible actions we could think of in vain, it would not be worth acting in the first place. Concretely, when we believe a certain action will impact the situation with a sufficiently high probability and we believe we are sufficiently capable of executing this action, there is a high chance we might give it a try. This all assumes that we regard the result of the action as valuable.



#### 3.1.5. Knowledge



Knowledge is strongly linked to our beliefs. By gaining new insights and gathering additional information, the beliefs that inform our norms and our ability to make an impact may change or be strengthened. Offering trustworthy information is one of the cornerstones of awareness-raising, given the influence of knowledge on our behaviour.

#### 3.1.6. Social norms

Social norms are those norms that are endorsed and instilled by the communities to which we belong. The opinion of our family members, our friends, our colleagues, the members of the cultural or religious group we are a member of, our fellow citizens and so on, is particularly important compared to the opinion of people we have little to do with. The values and norms of these communities have a significant impact on our behaviour.



### **3.1.7. Institutional and market regulations that support the desired changes**

Our broader societal system can influence the attractiveness of certain actions significantly. Some well-known examples are subsidizing the installation of solar panels, subsidizing farmers who leave the borders of their fields unmanaged and thereby create a habitat for pollinators, heavily taxing cigarettes, and offering free installation of electric fences that keep wolves out of meadows for cattle.

An important remark here is that simply interfering with the market price often does not suffice. In the case of solar panels, for example, information should be provided to lower other thresholds, e.g. the doubts about the resulting (monetary) benefits and which trustworthy contractors can install the solar panels. Besides making something affordable, we also have to make sure people want it in the first place and that all potential obstacles in the process towards the desired result are identified and mitigated sufficiently. The importance of so-called 'capacity building' cannot be understated.



## Key take aways

- **Appealing to people's values with your message is more effective than trying to change their values with your message.**
- **By giving correct and trustworthy information we can update the knowledge people have. This way, we can influence their beliefs, and further down that chain, their personal norms and attitudes.**
- **Prompting certain actions and good conduct should go hand in hand with showing how this action will significantly impact the status quo. Furthermore, we have to boost people's confidence in their ability to act.**
- **Individuals identify with several groups and communities. To make a message more impactful, we can appeal to the values and norms of the group one identifies with.**
- **To incentivize a certain behaviour we should try to lower the threshold for as many influencing factors as possible: psychological (knowledge, beliefs, perceived control), and pragmatism (cost of implementation, accessibility, availability of necessary materials).**



# Surveys

4



## 4.1. Key insights

To get insights into the communication and awareness-raising strategies of our partners, a survey was conducted by the City of Angermünde. The data was collected in November of 2021 and comes from 34 respondents from 31 organisations in 15 different countries.

### 4.1.1. To communicate about old-growth forests

- More than 90 per cent of the respondents use a website.
- More than 70 per cent of the respondents use social media.
- More than 80 per cent of the respondents give lectures and presentations.
- More than 70 per cent of the respondents have a partnership with a professional school or university.
- Only 5 per cent of the respondents have a partnership with local businesses or cultural institutions.

### 4.1.2. Up to 80 per cent of the respondents reckon the people reached by their outreach and activities are mainly ecologically interested people.

### 4.1.3. The respondents focus on the following messages for the outreach and activities they organise:

- Old-growth forests are the home of our native wildlife.
- We, human beings, benefit from the ecosystem services that old-growth forests provide.
- Old-growth forests help us deal with the effects of climate change.
- Old-growth forests absorb and store carbon dioxide emissions which helps combat climate change.
- Old-growth forests help us feel relaxed and healthy.
- In Europe, old-growth forests are rare examples of preserved ecosystems. They are an important source of knowledge for scientists and a source of inspiration for how to deal in a better way with other forests.

### 4.1.4. There is a high demand for

- best practice examples of communication tools and methods,
- tools and methods to reach ecologically less interested people.



# Case studies

A vertical photograph of a large, ancient-looking tree trunk in a forest. The trunk is covered in moss and lichen, with a prominent horizontal scar or hollow. The branches are gnarled and spread out, some covered in moss. The background is a dense forest with autumn foliage in shades of green, yellow, and orange.

5



In this chapter, we will describe plenty of awareness-raising activities in a very detailed manner. The activities have been developed and implemented by the partners and supporters of the Life Prognoses project and the World Heritage Site "Ancient and Primeval Beech Forests of the Carpathians and other Regions in Europe".

For every activity, we assess the specific advantages of the approach. However, as our colleagues of the National Park Kalkalpen rightfully suggested, offering a mix of distinct activities has its own virtue already: "We are delighted with the diversity of our visitors and are proud of the positive feedback we have received from an ever-growing community."

## 5.1. A virtual connection

### 5.1.1. Social media and websites – Sonian Forest Foundation, Belgium

#### Summary

The overwhelming majority of the partners of the Life Prognoses project, whether they are ministries, national parks, or universities, have a website and several social media channels. Also for the Life Prognoses project itself, a website, a FaceBook, Instagram, and Twitter page exist. On these platforms, the partners share information about their whereabouts, about the projects they are working on and about any novelties in the area they manage. They announce the upcoming activities for the public this way and inform visitors about the desired behaviour in the natural area they protect. Furthermore, social media campaigns are set up revolving around certain topics such as the ecosystem services of old-growth forests to inform and sensitize.



Figure 11: Home page of the Central Balkan National Park website.

#### The message

Through the virtual pages, the organisation can announce everything that should reach the receivers in a quick, easy and unambiguous way. The message spread can be anything that has to do with the objectives of the park, which is in most cases related to the protection of the natural environment.

Figure 12: a social media post about the fieldwork of the Life Prognoses project.





Figure 13: a social media post that was part of the Beech Power-Life Prognoses joint campaign on the importance of old-growth forest.

Social media and websites are available to everyone. Whereas social media is completely free of charge, websites are not. Depending on whether a website is built by the organisation itself, by using something like WordPress for example, or the development and management of the website is outsourced to a third party, the costs vary drastically.

A website can come in handy when conducting a social media campaign: websites allow for plugins to be installed in which the content that will be posted on several social media platforms can be scheduled. This

way, you have to load your content only once for the subsequent period, and it will be posted without any further intervention.

### Advantages of this approach

Social media and websites are means through which a very broad audience can be reached on a whim. The development of attractive and catchy posts requires some practice and help from communication experts, but in general, it is a relatively cheap and easy way of spreading a message.

### Tips & tricks

- 🌿 Make sure the message you spread is catchy and unambiguous. People scrolling through their newsfeeds will often not take the time to read and interpret tedious and complicated sentences.
- 🌿 Make sure the language you use is adapted to the public you intent to reach. Scientific words and other jargon do not have a place in social media posts.
- 🌿 If you want to spread a message more in-depth, you can make a catchy post with a link to your website where the interested ones can find a longer, more nuanced article.



### 5.1.2. Press releases – National Park Kalkalpen, Austria Summary

Kalkalpen National Park sensitized the public to the topic of the protection of Old-Growth Forests and their biodiversity through press releases. The following four press releases have been published in various regional newspapers:

- Press release "Old beech forests of Kalkalpen National Park – unique and species-rich" in OÖ Nachrichten supplement 'Hoamatland' (approx. 301,000 readers).
- Press release "Forest miracle – Our green universal genius" in OÖ Nachrichten supplement 'Hoamatland' (around 301,000 readers).
- Press release "Back to the primeval forest: Nature takes the lead" in OÖ Nachrichten supplement 'Lebenswerte Region' (around 34,000 readers).
- Press release "Ancient beech forests – valuable UNESCO natural heritage" in OÖ Nachrichten supplement 'Was ist los' (around 301,000 readers)

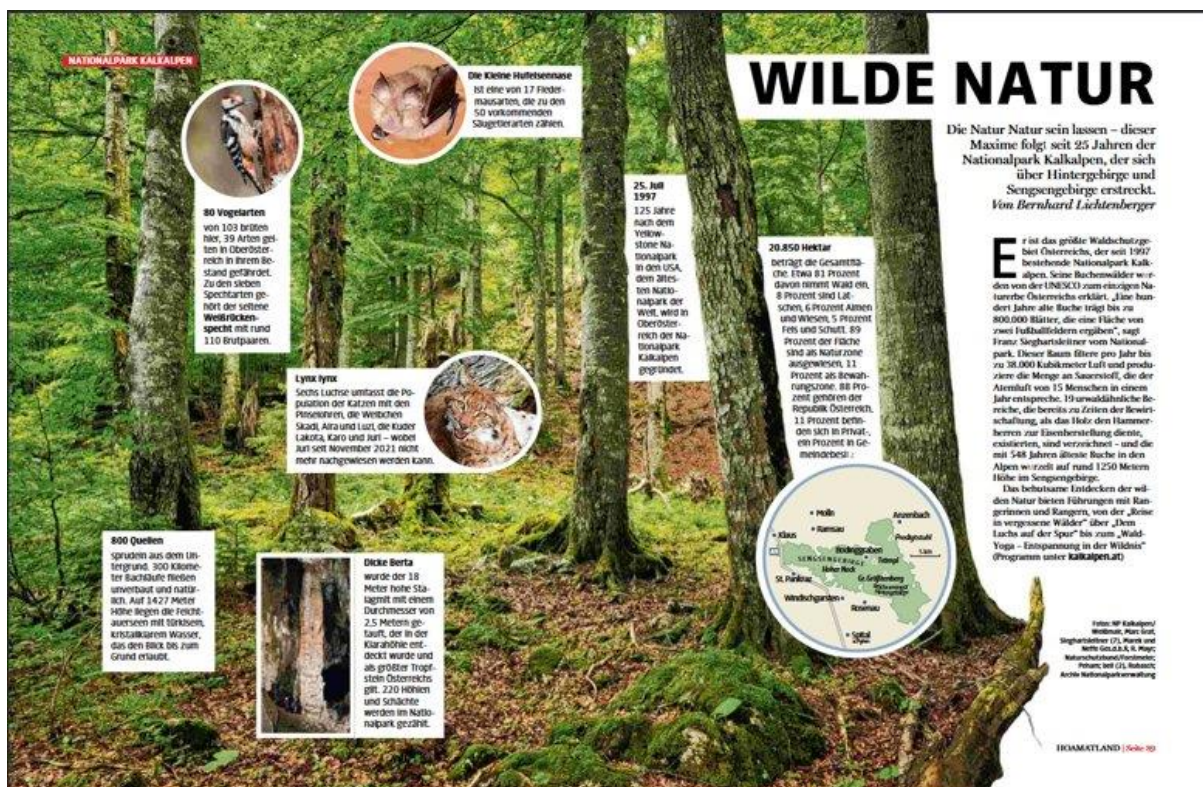


Figure 14: One of the press releases by Kalkalpen National Park.

About 937,000 readers who subscribed to these newspapers were reached. Additionally, the National Park reached people who bought the newspapers spontaneously or read one of the free copies available in coffee houses or doctors' surgeries, for example. In addition to these paid advertisements, Kalkalpen National Park has implemented additional public relations measures to achieve the objectives in the best possible way. Articles in media such as "Die ganze Woche, March 2022", "NaturLust Magazin, June 2022", "Landeszeitung Unser Oberösterreich, Sept. 2022", "Autotouring Magazin, March 2023" supported the impact of the LIFE Prognoses press releases. A press release on the topic and the inclusion of the topic as part of the 25th anniversary of Kalkalpen National Park and Kalkalpen National Park's social media presence ensured a good media presence for the UNESCO World Heritage Beech Forests.



### **Logistics**

In Kalkalpen National Park, the "Public Relations" team published the articles in the newspaper supplements of the Oberösterreichische Nachrichten (short: OÖ Nachrichten for Upper Austrian News) and in a nature magazine. The message was primarily aimed at the regional population and stakeholders in the region. The content was adapted to the respective season and reference was always made to the UNESCO World Heritage Beech Forests.

### **Advantages of this approach**

The advantage is that the readership was made aware of the topic in a very timely manner and that additional dates for upcoming events in the national park on this topic could be announced in the articles. As a result, interested people were able to learn more about this topic as part of the national park's education program. The publications at various times enabled interested parties to experience the entire development cycle of the beech forest throughout the calendar year.

### **Tips & tricks**

With some newspapers, it can be advantageous to make an agreement about the content of the article. For example, by considering the season in the content of the article, editorial and free UNESCO Beech Forest content was also published.



### 5.1.3. Adopt a beech tree - Paklenica National Park, Croatia

#### Summary

On the occasion of the fourth anniversary of the inscription of the beech forests of Paklenica National Park, Croatia, on the UNESCO World Heritage List, Public Institution Paklenica National Park organized an activity called „Adopt a UNESCO Beech tree” in July 2021.



Figure 15: Social media call to adopt a beech tree in the context of the fourth anniversary of the inscription on the World Heritage List.

#### The message

This activity was organised to gain publicity for the UNESCO World Heritage Site with an educational and inspirational component.

#### Logistics

##### *The preparations*

The preparation before the launch of the call takes about five days. In total, the preparation and implementation until finalisation took 20 days. The number of trees to be “adopted” should be defined, and the corresponding trees should be selected in the field. Suitable trees are those that stand along the hiking trails so people do not leave the trail when they visit their tree. The adoption call should be designed and conceptualized. This activity can be implemented with minimal budget. The call was published via social networks (Facebook, Instagram) and via the official website; it gained unexpected publicity.

### *Choosing the beech trees*

First, the number of trees „to be adopted“ was determined. Then, the most suitable trees were selected in the field. Trees along the hiking path were found to be most suitable. This way people do not leave the trail to visit their tree. The coordinates of their location were recorded and each tree was photographed. These coordinates are only known to the adopter of the tree. The next step was to define the rules of the call and the perks each adopter gets with its „adopted tree“. It was all published on social networks and shared by local and national media. The call was active for 20 days. The selection of the winners was made by a jury based on the most original “reasons for adaptation”.



Figure 16: Paklenica National Park, Croatia. © Paklenica National Park.

### *Implementing the activity online*

To reach the broadest public possible, an online call was launched in two languages (Croatian and English). The call reached locals, and people at the national and international level. The back-up plan in case of slow/non-response of the public was to set reminders in the meanwhile during the competition. There was no need for the implementation of the back-up plan, as the response to the call was very good. Emphasis was placed on the recognition of the importance of beech forests, preservation and care about the natural values and gaining a perspective on the bright future with preserved nature. The participants were satisfied with the competition and the awarding was perceived as stimulating. There has been a very good response from the public regarding the quantity of the sent reasons. Also, the interest of local and national media was very good for this activity. Except for the publications in different newspapers, Croatian National TV has recorded short reportage of this activity with on-site interviews with the organizers and two of the “beech tree adopters”. The selected adopters were diverse: a six-year-old, a grandma who wanted to visit the tree with her grandchildren, a foreigner who regularly visits this region, and so on.

The reactions of the selected adopters were published and the adopters were contacted in order to give them the necessary information and perks.



### The text of the call

"Untouched beech forests of Paklenica National Park are under strict protection as a part of the UNESCO World Heritage Property "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe".

Healthy and preserved old forests are exceptionally important in mitigating the effects of climate change. For example, a 100-year-old beech, "eats" 2,5 kilograms of carbon dioxide and releases about 1.7 kilograms of oxygen per hour. This is as much oxygen as 50 people on average need to breathe for an hour. Just imagine how much oxygen one beech tree produces in its life! The lifetime of a beech tree is more than 300 years.

Furthermore, the forest ecosystem is an important habitat for many other organisms and contributes to the conservation of overall biodiversity.

To support the importance of preserving old beech forests, which are key to mitigating the impact of climate change and sustaining high biodiversity, you can become an "adopter" of a beech tree in one of the most valuable and best-preserved beech forests in Europe.

If you want to participate, in the comments, please write a few short sentences (max. 5-6) referring to the reason you would like to become an adopter of a beech tree from the forest on the UNESCO World Heritage List. Five participants with the most original reasons for adopting, become adopters of one tree and get the coordinates of the location where the tree is located. In order to be able to personally visit their tree, each will receive an annual ticket for free entry to the National Park. And that's not all!

They also get:

- 🌿 certificate: „My beech lives in the forest inscribed on UNESCO World Heritage Lists.
- 🌿 Card "name and surname"- beech adopter with the photo of the adopted beech.

To let you know what is going on with your tree, we will periodically report to you on its condition. The competition lasts from July 7th to July 14th, 2021 until 2:30 p.m., and we will publish the selected adopters on our Facebook page on July 16, 2021. If you have time and if you want, please like and share."

### Advantages of this approach

The activity can be implemented in a low-cost way and by a small number of people. The intended public is easily reached through the social media platforms and websites used by your organization. The adoption of a beech tree seems to be a good incentive for people to engage with the call, comment on it, and share it abundantly. Because of the uniqueness of the activity, it gained a lot of publicity in the media as well.

### Tips & tricks

- 🌿 Prepare an interesting call for the activity.
- 🌿 Careful planning of the competition's rules is important for the organisers to straightforwardly select the winners. It is equally important for transparency. Every step of the competition should be published.



Figure 17: Certificate of adoption for the selected applicants.

## 5.2. Away from our screens, but not in the forest yet

### 5.2.1. Branded merchandise – Central Balkan National Park, Bulgaria

#### Summary

Promotional t-shirts & magnetic souvenirs were designed for the participants of the excursions in the central Balkan national park. The branded material was an integral part of the concept of these excursions (see 5.3.1.2).



Figure 18: © Central Balkan National Park.

#### The message

The merchandise has several functions. First of all, the excursion is a tangible means of transforming the participants into a single group that is 'branded' in green to support the forest. Later on, it is a reminder of the excursion, the good experience of being out in the forest with other people and the message that was given during the excursion. Finally, it makes the national park more visible to other people, specifically the relatives and friends of those who participated and are wearing the t-shirt or clanging the souvenir onto their fridge. It testifies of the people taking pride in the national park, to see it as their heritage. To conclude, tangible souvenirs of the excursion help to turn the public into ambassadors of the national park and its protected areas.

#### Logistics

In August 2021, advertising and information materials were prepared – T-shirts with a message for the protection of beech forests (460 pieces) and magnetic souvenirs (496 pieces), dedicated to the Bulgarian component of the serial site of the World Heritage Property (serial WHP). The costs for the t-shirts, EUR 2,688, made up the biggest share of the total cost of the excursion. So, depending on what type of promo material you develop, the price can go down (or up).

#### Advantages of this approach

Thanks to tangible relics, people can be reminded of the good experiences they had during a certain experience thanks to the presence of the national park and its protected areas. Furthermore, it enhances the visibility of the national park through its newly recruited 'ambassadors'.

#### Tips & tricks

It is good to consider carefully which kind of promo material suits your budget best. This cost can easily become the largest share of the total costs of the activity.



## 5.2.2. Information stand at the yearly city fair - City of Angermünde, Germany

### Summary

During the yearly city fair in Angermünde, the City of Angermünde informed the public about the UNESCO-World Heritage Beech Forest component part "Grumsin" close to the city. Information material, a map of the European WH site, a wooden puzzle and a game for children were provided.

### The message

The city has a natural treasure in its vicinity that it worth getting to know.



Figure 20: puzzle biodiversity and old-growth forests. © City of Angermünde



Figure 19: © City of Angermünde

### Logistics

The stand had to be reserved beforehand and the information material needed to be prepared. A schedule was made for the staff of the City of Angermünde to manage the information stand-alone or in a team with another person throughout the day. An additional UNESCO-teamer was present to inform also about UNESCO World Heritage and [UNESCO volunteer service kulturweit](#) for youth.

### Advantages of this approach

The city fair is an excellent opportunity to reach persons and target groups that are not explicitly interested in nature or forests. This way, also these people can be motivated to visit the World Heritage forest close to Angermünde and learn more about it.

### Tips & tricks

- Develop a stand that is particularly attractive for children. While they want to stay for a bit, their parents can talk and receive information.
- Design a visually attractive stand with the staff that is motivated for the topic.



### 5.2.3. Information stand at children's day and hand-out for teachers City of Angermünde, Germany

#### Summary

At the environmental education centre, a children's day activity was organised for school children and teachers of the region. The City of Angermünde installed an information stand for teachers and distributed hand-outs to inform them about the possibilities of visiting the forest for teachers with a group of school children.



Figure 21: Information stand. © City of Angermünde.

#### The message

There already are opportunities to visit the World Heritage forest in an educational way, specifically with school children. To facilitate access to these activities, the teachers were informed about the different programmes and by which transport means to reach the forest.

#### Logistics

A hand-out was developed by the working group for education related to the World Heritage forest component part Grumzin that briefly lists the available options for teachers who want to take their class to the forest for an educational trip. An information stand was developed with nice pictures and maps about the WH site and its location.



# ALTE BÄUME



**ROTBUCHE**  
*Fagus sylvatica*  
 ca 100 Jahre alt, Standort: Wald  
 Höhe 25-30 Meter  
 Stamm-Durchmesser(BHD): 60 cm  
 Kronen-Durchmesser: rund 15 m

Um die Leistungen einer 100-jährigen Buche zu ersetzen, müssten rund 5.000 junge Buchen gepflanzt werden.

Rotbuchen können 300-500 Jahre alt werden. Die hier beschriebene 100-jährige prototypische Buche ist daher eigentlich als Jung zu bezeichnen. Da in Deutschland kaum noch Buchen über 100 Jahre existieren, gibt es auch nur wenig Daten über sie.

### KRONE

- 600.000-1.000.000 Blätter  
 ca. 1.500 m<sup>2</sup> Blattflächen
- ca. 26 kg Blätter  
 ca. 800 kg Ast  
 (baldes (eventl. Trockengewicht))
- Filbert 30-40.000 ml Luft pro Tag  
 Filbert ca. 1 Tonne Feinstaub pro Jahr
- Produziert 13-17 kg Sauerstoff pro Tag  
 (Sommer, nicht zu heiß)  
 reicht für 10-15 Menschen pro Tag
- Produziert pro Tag 22 kg Zucker (durch Photosynthese)
- Verdunstet 400-500 Liter Wasser am Tag (Sommer)
- Kfz im selbst bestehend Umgebung  
 3-6 C<sup>+</sup> ab (Vergleich zu Freiland)

### STAMM

- ca. 2.000 kg Holz (Trockengewicht)  
 ca. 120 kg Rinde (Trockengewicht)
- Zuwachs des Durchmessers:  
 3-10 mm/Jahr
- Kohlendioxid-Bindung: ca. 3.500 kg CO<sub>2</sub>
- 30-50% des CO<sub>2</sub> nehmen alle Bäume im letzten Viertel ihres Lebens auf
- Durchschnittlich 24 Mikro-Biotope pro Baum (Höhlen, Pilzstiele, Flecke usw.)
- Bis zu 270 Käfer- und Wirbellosen (Vögel, Neugier usw.) leben in Baumhöhlen
- Bis zu 140 Spinnenarten am Baum
- In Buchenwäldern gibt es insgesamt 4.300 Pflanzen- und Pilzarten
- Sowie 6.715 Tierarten

### WURZELN & BODEN

- Wurzelfläche 200-400 m<sup>2</sup>  
 Wurzelmasse ca. 700-1.600 kg  
 je nach Bodenart und Wuchsform des Baums (Trockengewicht)
- Wurzeltiefe 2-6 m  
 je nach Bodenart und Wuchsform des Baums
- Kohlendioxid-Bindung: ca. 1.350-2.900 kg CO<sub>2</sub>
- Pflanzgut um die Wurzeln: mehrere 100 m<sup>3</sup>
- Trinkt und filtert bis zu 800 Liter Wasser pro Tag (Sommer)
- Um die Wurzeln leben bis zu 2 Mio. Kärlern, es dient zudem als Wohnort für viele Wildtiere (Mäuse, Dach, Fuchs usw.)
- Wurzeln halten und durchlöchern das Erdreich, erhöhen so die Bodenqualität

\*Durchschnittswerte aufgrund von Berechnungen und Varianz der natürlichen Gegebenheiten. Quellen auf Anfrage. Alle Bild-Rechte liegen bei der Naturwald Akademie.

## ÜBERSICHT DER URALTEN BÄUME

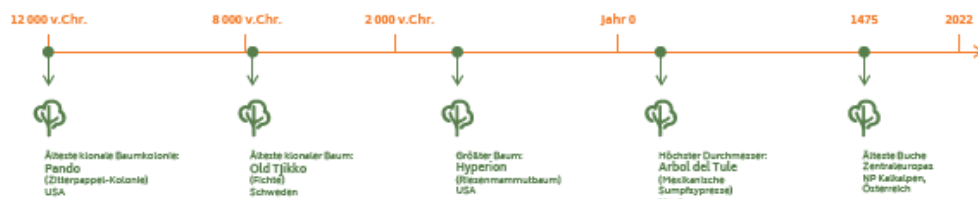


Figure 22: Ecosystem services of old beech trees for teachers. © naturwald-akademie.org

### Advantages of this approach

The fair is a good opportunity to meet with many teachers. By informing them about the possibilities of visiting the world heritage in an educational setting, the knowledge about the world heritage and old-growth forests will reach the younger generations effectively and efficiently.

### Tips & tricks

- Go where the teachers gather.
- It is important to provide tangible information material for the teachers to take with them.
- Produce information material based on the activities that you organise. A hand-out about possibilities for school children to visit the World Heritage forest Grumsin did not exist previous to the Children's Day. This day motivated the City of Angermünde to develop such information material.



Figure 23: Information stand. © City of Angermünde.



#### 5.2.4. Equipment for local guides – City of Angermünde, Germany

##### Summary

Local guides conduct guided tours in Grumsin for visitors. Unfortunately, they often do not have the appropriate visual educational equipment to interact with the visitors. Therefore the City of Angermünde is producing a collection of actual maps and graphics related to the World Heritage forest. This material is printed on banner fabric so it can be taken out to the forest in a backpack and shown to the visitors. This way the City of Angermünde can support the guides in conveying messages related to the World Heritage forest.



Figure 24: guided tour in the Grumsin reserve © angermuende-tourismus.de

##### The message

The people participating in a guided tour should understand that they are walking in an old-growth forest. The City of Angermünde wants them to understand what the particularities of old-growth forests are, why they are important, and that they are part of a Europe-wide network of World Heritage beech forests.

##### Logistics

First, the City of Angermünde participated in the guided tours that are provided to gain insight into which info is conveyed and what is lacking. Updated available information material related to the topic was compiled and provided. Furthermore, they asked which materials should be produced in what kind of format to support the guided tours. New relevant material (e.g. world heritage Beech forest network and actual Beech forest distribution on one map) were developed and printed on e.g. banners to be taken on the guided tours. The new developments e.g. map were also shared with the coordination office to be provided to the World Heritage beech forest network.

In 2024, a workshop for the local guides will be organised, consisting of a short indoor presentation and an excursion. During this workshop, information about world heritage, old-growth forests, and ecosystem services will be communicated. The local guides will be provided with the key messages that should be conveyed to the public and the supporting material during this explanation of the excursions they guide. Meanwhile, information about and results of the research and projects conducted in the biosphere reserve will be communicated.

##### Advantages of this approach

Cooperation with a well-established network of local guides makes it possible to bring the latest pieces of knowledge to a wider audience. This kind of cooperation results in a broad public being informed with the latest updated information.



Figure 25: © City of Angermünde

### Tips & tricks

- 🌿 Prepare information and material that can be directly used by the guides as from experience not everybody produces their own material.



### 5.2.5. Meeting with local communities – Carpathian Biosphere Reserve, Ukraine Summary

The park administration of the Carpathian Biosphere Reserve organised four meetings with local communities, that are situated near the Heritage Site. The meetings are held between the park administration and the authorities of the local communities, as well as between the biosphere administration and the stakeholders of the biosphere that are not necessarily authorities.



Figure 26: Pictures of the meetings with local communities and the information brochures given to them. © Carpathian Biosphere Reserve.

#### The message

During the meetings, the whereabouts of the biosphere administration and the projects they execute are explained. In the case of the Life Prognoses project, this is an excellent opportunity to talk more about the importance of the world heritage site in terms of old-growthness and ecosystem services. These meetings aim to find support for the activities and protection regimes in the biosphere reserve by informing the involved people and organisations well.

#### Logistics



Considering their time and resources, the meeting was held on the territory of the community. Before the meeting, the availability of necessary community (or stakeholder) representatives should be considered as well as the planning. The park administration prepared a short presentation and brought printed hand-outs to fix the message. Branded souvenirs make a good impression (though this is not necessary). The possibility of placing posters somewhere in crowded places should also be discussed and agreed upon beforehand.

#### Advantages of this approach

The direct contact between the staff of the biosphere reserve and the stakeholders and local communities facilitates the transfer of information. Expressing the importance of what is done and the opportunity to enter into a constructive dialogue creates understanding and support for the protection regimes that are active in the reserve.



### **Tips & tricks**

-  It is better to visit the community on their grounds instead of expecting them to come over to the park directorate.
-  Visiting local communities is a good opportunity to discuss opportunities for cooperation for awareness raising regarding the forest.



## 5.2.6. Expert workshop at national level – University of Ljubljana and Ministry of Environment and Spatial Planning, Slovenia

### Summary

The University of Ljubljana and the Ministry of Environment and Spatial Planning organised a high-level stakeholder meeting at the national level with all relevant stakeholders regarding old-growth forest protection. A discussion was held with the help of guiding questions and a moderator to shape the ideas and interventions for the implementation of the Biodiversity Strategy 2030.



Figure 27: High-level stakeholder meeting for old-growth forest protection at the national level.

### The message

At the national level discussion on existing and further protection of old-growth and primary forests with the key organisation is needed to contribute to the implementation of the EU Biodiversity Strategy for 2030 and achievement of national biodiversity and forest management objectives.

### Logistics

The first workshop will be organised in 2022 and the second workshop is scheduled for 2023. We aim to present a political and scientific framework for the enhanced protection of primary and old-growth forests. We will try to identify the main obstacles to the strict protection of additional old-growth forests and the best approach for good solutions.

In organising the expert workshop at the national level, we will use the experience from the management of our large Natura 2000 network, covering 38% of the country. For example, experts, key sectors and stakeholders are strongly involved in the preparation of the Natura 2000 Management Programme for Slovenia.

### Advantages of this approach

A face-to-face discussion between all the involved parties generates understanding and sparks creativity.

### Tips & tricks

- Announce the planned awareness-raising activity well in advance;



- Prepare the comprehensive list of target groups to be invited;
- The framework for the discussion needs to be clear and well presented in the invitation and at the beginning of the workshop;
- The discussion at the workshop should be moderated and interactive.
- The next steps should be identified as part of the conclusions that should be shared with the participants.



### 5.2.7. Virtual walk – Abruzzo, Lazio, and Molise National Park, Italy

#### Summary

In cooperation with a virtual reality filmmaker and a sound specialist, the national park developed a virtual walk through several parts of the world heritage component parts. The result can be experienced in the museum of the national park with the help of virtual reality glasses and a headset. The resulting project is called Sfera Arborea.

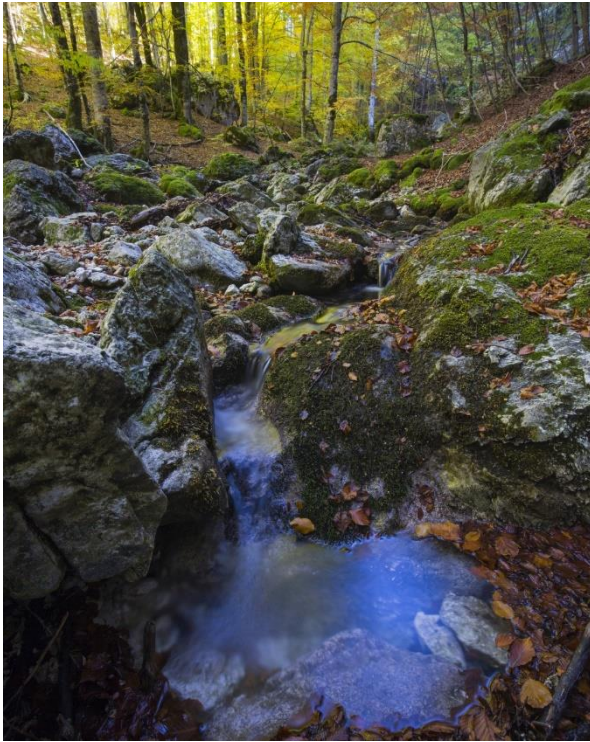


Figure 28: Set up of the virtual reality walk and a couple of the locations that are depicted.



### The message

The virtual walk helps people see and hear the parts of the forest where no one is allowed to come. The message is not explicit, since it concerns an experience of the forest without any voice-over or subtitles. The aim is to instil a sense of wonder by seeing and hearing the oldest parts of the forest and hereby, inexplicitly, communicating their value and worthiness of protection.

The trailer of the project can be found here:

[https://www.youtube.com/watch?v=j\\_F\\_ut1iVGU](https://www.youtube.com/watch?v=j_F_ut1iVGU)

The heart of the beech forest ecosystem lies in these areas that are forbidden to the public: here are its oldest ecosystem elements. The experience lets therefore the visitors virtually dive where it would not be possible to access otherwise. During the video, the forest is observed in various phases of the day, in a succession of static scenes that are nevertheless characterized by a great richness of visual elements, such as the abundance and complexity of nature that constitute it. Similarly, the sounds, recorded on site, return a multiplicity of presences, animal and not. In fact, the faunal elements, although never showing to the sight, continuously present themselves to the ear, as for the bellowing of the deer or the singing of the birds. This absence of events, which is only apparent, suggests diving deeper into the forest ecosystem, understanding it as a dense network of elements in constant transformation, despite this might not be immediately grasped by the human eye. Sfera Arborea aims to involve the visitors on a sensory and emotional level, inviting them to pay more attention to the environments that we cross, whose richness would otherwise be ignored. The project manifests the shared desire of the authors and the National Park to raise a greater awareness and respect for Nature, in which the human being is a guest and not a protagonist. (YouTube Sfera Arborea – Trailer, 2023)

### Logistics

To make a 360° video with good quality sound, two experts were contracted: Anna Francavilla and Giulia Francavilla, a sound designer and a virtual reality expert who directed the virtual reality walk that is called 'Sfera Arborea'. The directors and the filming crew explored the forest where they would shoot the images and record the sounds together with the park director. Intensive talks were held to ensure everyone understood the project in the same way. Usually, natural scenery is portrayed to the public in ways that are considered 'exciting', starring popular wild animals, and depicting hunting scenes. Sfera Arborea on the other hand creates an immersive experience that allows people to enjoy the tranquilizing effect a natural environment can have and find wonder in that. It is very important to make sure all contributors understand this aim that is deviating from the traditional ways of showing nature.



Figure 29: The recording of Sfera Arborea in Abruzzo, Lazio y Molise National Park.





Figure 30: Recording in 360°.

#### Advantages of this approach

Strict reserves are often remotely located or simply inaccessible to the public. Often it is difficult to accept restrictions, such as inaccessibility, when there is no awareness about what it is exactly that is protected this way. The virtual walk can bring the public into contact with the areas they protect by not being there.

#### Tips & tricks

- 🌿 Make sure that everyone involved in the making of the virtual reality experience understands well what the aim of the video is.
- 🌿 Always provide more VR glasses than you think you need. The battery empties quickly and sometimes they have to be restarted for a software update.
- 🌿 VR glasses can be bought, but if you plan to show a virtual walk only for a particular activity, it is probably to your advantage to rent them for a day.
- 🌿 A headset makes the experience more immersive.
- 🌿 Assist during the moments the visitors use the VR glasses.

Besides shooting the video, and recording and designing the accompanying sound, the means to show the result to the public needed to be purchased. It is important to purchase the 'correct' VR glasses that are suitable for the developed movie. The national park worked with the Meta Quest VR glasses. The use of an additional headset results in a more immersive experience. A room is needed where the participants can either stand freely and move around without hurting themselves or sit on a chair that can turn around its axis. Since starting the video with the VR glasses is not a trivial thing to do, the visitors have to be assisted by people who can work with VR glasses.



Figure 31: The recording in progress.



### 5.2.8. New Year's Concert Riha film "Austria's World Heritage Sites" – National Park Kalkalpen, Austria

#### Summary

During the New Year's Concert of 2022 by the Vienna Philharmonic Orchestra, the intermission film "Austria's World Heritage Sites" featuring the World Heritage Beech Forests in National Park Kalkalpen and Wilderness Area Dürrenstein was shown.



Figure 32: © ORF/Riha Film.

#### Logistics

The film was shot as an intermission film for the New Year's Concert on January 1, 2022, on ORF 1. It showed short impressions of all Austrian World Heritage Sites.

<https://www.tips.at/nachrichten/steyr/land-leute/554311-neujahrskonzert-welterbe-im-pausenfilm>

#### Advantages of this approach

The Vienna Philharmonic's New Year's Concert attracts a large international audience every year and is broadcast and repeated on many other television channels such as ZDF, ARTE and SRF. Most television stations also broadcast the intermission film. The UNESCO World Heritage Beech Forests in Kalkalpen National Park and Wilderness Area Dürrenstein-Lassingtal were thus presented to around 80 million viewers worldwide.



### 5.2.9. Theatre show – Abruzzo, Lazio, and Molise National Park, Italy

#### Summary

A theatre show called “Una Giornata Qualunque” was developed and performed. The show focusses on the interactions between anthropic activities and natural resources. At least four performances in four different villages of the national park Abruzzo, Lazio and Molise were conducted.



Figure 34: © Lanciavicchio

#### Logistics

The national park has contacted a theatre company of the territory, explaining which were the needs, themes to be touched, and the messages to be spread. The company planned the show and then it was organized in different towns of the park. The national park arranged the budget together with the company.



Figure 33: © Lanciavicchio

#### The message

The national park believes that is more difficult to sensibelize people on the importance of forests, compared to the communication of flags and charismatic species such as Marsican Brown Bear, Chamois, and Wolf. to sensibelize people on the importance of forests. For this reason, the national park wants to look for the best tools to make the common people aware of the importance of old-growth forests and the ecosystem services they provide.



Figure 35: © Lanciavicchio



Figure 36: © Lanciavicchio

### Advantages of this approach

This activity is especially suitable for reaching younger children, but also parents will be informed. The message is given in a very intuitive way. Through the use of narrative and performance arts, the message appeals to emotions and imagination first. This is a great way to get people's attention and make the message stick.

### Tips & tricks

- It is very important to find the most fitting company for the idea of the show. The company has got the tools to find the right way to the objective, more than the Park has. For this reason, the Park should be confident with the company. But, of course, the Park has to evaluate the show idea proposed and see if it is in line with the aim.

- Some parts, and lines, can be also re-discussed between the two parts (park-company), to align

something that does not perfectly fit the idea.

- It is very important to have a product that touches, moves, excites people, and lets them meditate: this can be the power of such a tool.



### 5.3. Into the old-growth forest

#### 5.3.1. Educational excursions

##### 5.3.1.1. For visitors and tourists – Carpathian Biosphere Reserve, Ukraine

###### Summary

Five different excursions were developed for visitors and tourists. The excursions combine spectacular views with examples of old-growth forests and places of scientific interest.

###### The message

The message of the excursions is twofold: first of all, the value of old-growth forests for human wellbeing is explained, as well as the scientific value of such protected areas. Secondly, the visitors come into direct contact with the forest and are guided along the best views and most beautiful spots to catch their attention and instil a sense of wonder.



Figure 38: © Carpathian Biosphere Reserve



Figure 37: © Carpathian Biosphere Reserve

###### Logistics

The trails were developed based on maps and expert knowledge of the area. After some trials, one of the hiking trails was substituted by an alternative. The reason for this substitution was that the original trail was found too monotonous: the visitors would see too much of the same, which risks that they might not find it entertaining. This would be the opposite of the objective.

###### Advantages of this approach

Usually, people are not very fond of information presented to them just in the form of written materials or boring lectures or presentations. People need experience and a feeling of participation and involvement in something exciting and different from

their daily routine. An excursion is an opportunity to escape from their busy lives and virtual connection (as usually natural forests in the area are located in places with poor network coverage if any at all) to distract from the regular environment and dive into the wonder of nature, accompanied with an interesting and informative message from the guide. Also, the important thing is a company of people, or a team, as usually

even if you would like to get out to nature, you still need good company and organization to enhance the impression.

The excursions demonstrated that the participation of people with diverse backgrounds brings good results. If not for the excursion, many of these people would never have a chance to meet and exchange in an informal and unconstrained way.

### Tips & tricks

- Test the trails beforehand and check whether there are enough elements that illustrate what is explained and that catch the attention of the participants.
- In case resources allow it, provide a picnic, a meal, or a drink at the end of the excursion. This way, the participants can stay for a bit afterwards, reflect on their experience, and exchange with the other participants. Furthermore, this is the best time to deliver a key message and ensure the experience is retained.
- Souvenirs, branded materials or printed hand-outs help the participants retain their experience better.
- The information given during the excursion should be tailored to the intended target group.



Figure 39: © Carpathian Biosphere Reserve



### 5.3.1.2. For visitors and tourists – Central Balkan National Park, Bulgaria Summary

Seven educational excursions (bilingual) with different levels of difficulty (three levels of difficulty, two editions of each level plus a seventh one because of the success of the concept) were organised and conducted. The excursions present the characteristics of the beech forests in part of the nine reserves on the territory of the Central Balkan National Park and focus on the ecosystem services provided by them.

In 2021, 3 excursions were organized with 68 participants between the end of August and the beginning of September. Because of the spectacular success of the concept, four additional excursions were organized in 2022.



Figure 40: © Central Balkan National Park

#### The message

CBNP is a well-known protected area for the Bulgarian population. It is not always clear to the public what the differences between distinct protection regimes are and which regime is in force in the existing protected areas. Nevertheless, it is generally clear where these areas are located and that they are protected somehow.

The purpose of this activity was to test three different guided walks to check if they were well designed (distance, level of difficulty) and to test if the explanation during the walk was adapted to the needs of the participants. The message communicated during the excursions focussed on the importance of old-growth forests, the types of protection, and the need for protection related to this importance.

There is only a small market for specialized touristic products in the protected areas and specifically in the Central Balkan National Park the offer is low. Together with the poor expertise of the tour operators in this field, this is a reason to search for a new



approach to get information across. There was a focus on those who have an interest in protected areas and nature-based tourism. So, this was an attempt to direct contact between experts from the park directorate and our natural allies and supporters.



Figure 41: © Central Balkan National Park

## Logistics

### Timeframe, preparation, and selection of participants

At the beginning of July 2021, the invitation to participate in the organized tours was published in Bulgarian and English in the news section of the Park Directorate's website ([www.centralbalkan.bg](http://www.centralbalkan.bg)). It contained a detailed explanation of the three proposed options – low, medium and high level of difficulty. A participation form (in Bulgarian and English) has also been published. The collected information was used in the selection of participants for each of the proposed tours.

Within the specified period – three weeks (until the 30th of July 2021), 53 completed forms were received for a total of 75. candidate participants (in some of the forms the persons more than one, due to the entry of under-age members of the family).

On the 5th of August, the candidates were selected according to their preferences for participation in the suggested three tours, declared and demonstrated experience and knowledge, and expressed the desire to be in a group with other candidates. As a result, lists of selected participants in the three guided tours were published in the news section of the Park Directorate's website.

### Preparation- information material

In August 2021, advertising and information materials were prepared – T-shirts with a message for the protection of beech forests (460 pieces) and magnetic souvenirs (496 pieces), dedicated to the Bulgarian component of the serial World Heritage site.



### The excursions

On the 28th of August, the 4<sup>th</sup> of September, and the 11<sup>th</sup> of September, the excursions were conducted. The excursions were attended by 15 to 28 participants for each tour). For the first tour, the participants were transported by bus from a meeting point in town to the starting point of the trail. For the other two excursions, the participants immediately started walking. During the walk-through talks and games, the participants were presented important facts about the National Park, Boatin Reserve, forests and in particular beech forests in the park, beech forests as part of a serial WHP, possible approaches to forest management, and forest biodiversity. The participants received a lunch pack, an advertising T-shirt, a magnetic souvenir and a brochure with information about the beech forests in the Central Balkan National Park. For the first excursion, the participants were picked up again by the bus and brought to town. The event is covered in the news section on the website of the Park Directorate.



Figure 42: © Central Balkan National Park

### How much was spent on external services (publicity, etc)?

Within the framework of the action, external services were used for the preparation of advertising and information materials and organization and conducting of walking tours with a guide in the beech forests of the Central Balkan National Park (transport, food, tour operator services). The total value of the used external services amounts to BGN 8,376.80 (EUR 4,282.99). Note that the biggest share of the costs are the T-shirts, EUR 2,688. So, depending on what type of promo material you develop, the price can go down (or up).

### What was the total cost of this activity?

The total cost for this activity amounts to BGN 11,259.49 (EUR 5,756.89).



### Advantages of this approach

The advantage of this format is the direct contact with the people who participate in the excursion. This direct contact can be found at different levels.

First of all, there is the direct contact of the participants with the forest, they experience the forest to its fullest degree, with all their senses.

Furthermore, there is direct contact between the participants themselves, who can exchange information, which can be very inspiring. Like-minded target groups, such as teachers, can inspire each other. They will link the national park and the protected forest site as that is what allowed for an inspiring encounter. A broader public can have interdisciplinary exchanges during the excursion and help each other interpret the information that is given.

Finally, there is direct contact between the people working for the national park and the participants. This allows us to explain the reasons for the park legislation and protection better. Often, the protection regime is perceived as an obstruction for the people living nearby. Leaflets and brochures about the reasons for such protection regimes are not very effective. When it comes to persuading people of the good intentions behind certain legislation, it works better to get into direct contact with them and have an exchange from person to person.



Figure 43: © Central Balkan National Park

### Tips & tricks

- Check the local legislation for guiding people and tourists in the relevant country. It might be compulsory to contract a touristic service from a licensed tour operator who has liability insurance for the participants in the event, even if the tour itself is free. The Central Balkan National Park paid for this service to a licensed tour operator, although the interpretation service was done by park directorate staff.





- Make sure that it is clear whether your organisation can ask the participants for a registration fee. The park administration of the Central Balkan National Park is not allowed to do this, so the activity is organised with additional funding.
- Make sure the explanation is at the level of the target group. Expert support can be essential if you want your message to be understood and interpreted in the right way by the participants.

### **5.3.1.3. For school teachers – Central Balkan National Park, Bulgaria**

#### **Summary**

The concept of these excursions is similar to the excursions that the Central Balkan National Park has organised for a broader public (see 5.3.1.2). What differs here is that the content of the excursion: and the way of communicating the message is adapted for a public that comprises primary and secondary school teachers.

#### **The message**

Also here, the message stresses the importance of protecting old-growth forests and the role world heritage can play in this.

#### **Logistics**

For the specific target group that comprises teachers, a publication has been made that outlines all the important information that is given during the excursion as well. This way the teachers can later implement the topic in the classes they give. Furthermore, a meeting to inform in a more organised setting was held with the teachers before conducting the excursion in the field. Experts on informal education were consulted to adapt the wording of the publication and the communication during the meeting and excursion to the intended target group.

#### **Advantages of this approach**

Limited time and means are an everyday reality. By educating educators about old-growth forests and protected areas, the threshold number of participants to whom a message can be spread is elevated. Teachers can spread the message to many more people in the classroom.

#### **Tips & tricks**

Make sure to develop the material, such as a publication, that allows the teachers to implement this knowledge into their classes.



### 5.3.2. World Heritage Day - National Park Kalkalpen, Austria

#### Summary

The World Heritage Day is celebrated yearly in Austria. All Austrian World Heritage Sites participate with their own program. Austria's only UNESCO World Natural Heritage sites are the old beech forests in Kalkalpen National Park and the primeval beech forests in Wilderness Area Dürrenstein-Lassingtal. Events on the subject of natural beech forests will be coordinated jointly for this day. Due to the early time in the calendar year (the beech trees are usually just beginning to awaken from their winter state), the higher-lying Wilderness Area Dürrenstein-Lassingtal offers free film contributions, while Kalkalpen National Park can switch to lower-lying forest areas and offer free guided ranger tours.



Figure 44: © Nationalpark Kalkalpen/Franz Sieghartsleitner

#### The message

As a joint day of action, this is intended to help draw attention to the UNESCO World Heritage Sites in Austria and raise awareness of the need for constant efforts to preserve these unique cultural and natural treasures from decay or destruction.

The World Heritage sites are to be made accessible to visitors in a special way on this day. Kalkalpen National Park is offering free guided Ranger tours to experience the world heritage Beech forests.

#### Logistics

Coordination and meetings within the teams of Kalkalpen National Park, Wilderness Area Dürrenstein-Lassingtal and the Austrian World Heritage Sites regarding different advertising measures in social media, press, radio, program booklets, mailing of Kalkalpen National Park newsletters, etc. began six months before the event and were intensified until the day of the event on the 18<sup>th</sup> of April.



### **Advantages of this approach**

- The cooperation of all World Heritage sites makes it easier to gain media attention for World Heritage Day.
- Guided ranger tours can provide much more knowledge and sensitivity to nature issues than brochures, newspaper articles, etc. can provide.

### **Tips & tricks**

In general, the Cooperation between all sites and the Austrian UNESCO Commission is very fruitful for all. We all meet at least twice a year to discuss current topics or challenges.



### 5.3.3. European day of the primeval and old-growth forests – Sonian Forest Foundation, Belgium

#### Summary

- 70 partners helped to make this day a success
- 6 municipalities provided staff and equipment, supported communication or came to the field to help us on that day.
- 3 regions worked together so that everything went smoothly, and the public was widely informed
- 16 representatives from the forestry departments were on site that day to answer visitors' questions, inform them about the management and the challenges and share their passion for the forest and their work.
- 65 activities were programmed: guided tours, exhibitions, workshops, awareness-raising activities, children's animations, etc.
- At 7 gateways to the forest, the possibilities for future developments abounded. 140 people were present that day to guide, to welcome, to present activities and projects, to answer questions of the visitors...



Figure 45: © SZ-FFS

This day is co-organized by a wide number of actors who are active in and around the forest. This will raise citizens' awareness by letting them discover the primary and old-growth forests in a pleasant, festive and attractive way, open to everyone. Included activities are guided tours, both for adults and for families and children, awareness-raising activities and workshops, meetings with people active in the forest and presentations of projects or achievements in favour of the forest. This



activity will be linked as much as possible to the International Day of the Forest ([www.fao.org/international-day-of-forests/en](http://www.fao.org/international-day-of-forests/en)). In the first year, a step-by-step roadmap/scenario will be realized. This will enable all the partners of the Life project to organize such an action in the forests close to their component parts. This roadmap will be implemented and tested in the Sonian Forest during the first year of the project.

### The message

The general message they want to spread is to respect the forest, work together for a healthy forest and be one with the forest. To fulfil this mission, the Foundation must be able to count on the support of the general public. This requires multilingual and uniform communication, but public participation is also of great importance. That is why the Foundation works closely with the relevant partners of the Sonian Forest on whose years of experience and expertise it can rely.

The Sonian Forest Foundation, together with all these partners, is at the helm of the Day of the Sonian Forest. Every year this day is the perfect occasion to get to know the forest and its partners in a unique way. Such as an exclusive visit to the product, a family quest, a sporty bike ride along the beautiful pearls of the Unesco World Heritage sites or instructive and above all fun workshops in the middle of the forest where children discover interesting things about forest life. All activities of the partners will make people aware so they can contribute themselves.



Figure 46: © Luc Foulon

### Logistics

6 to 5 months beforehand: The Sonian Forest Foundation launches a general call to all partners to participate in the upcoming edition of the Day of the Sonian Forest. This is done by e-mail and it includes an invitation for a preparatory digital meeting, organised per region (the Sonian Forest spans across the three language regions of Belgium).



During these meetings, the following topics will be discussed with the partners:

- Basic concept per access point
- Posters and communication material
- Logistics: number of tents, location, construction, etc.
- Coding of activities on the agenda
- Wishes and ideas
- Point of attention: Overview of opportunities for communication: ex: World cycling championships took place in surrounding municipalities 2 weeks before > great opportunity for promotion (posters, banners, ... )

1 month beforehand: Working group meetings per gateway with the involved partners. During these meetings, the following issues will be discussed with the partners:

- Programme of activities and coding
- Communication campaign
- Logistics
- Task distribution and responsibilities



Figure 47: © SZ-FFS

The Sonian Forest Day was announced as broadly as possible. But most of the people that are joining the day, are people already interested in the forest that want to discover new activities (with their kids, etc). To communicate broadly, we count hard on the municipalities, they have a different connection with (potential) visitors. We ask them to use their communication channels such as digital screens, newsletters, websites, and local brochures. They also help to spread our posters. Also through



cultural centers (museums, local arts centers etc.), we reach some people who do not know about the forest yet.

### Advantages of this approach

- At the same time, in the same place, many different activities for different target groups are organised. For each person, something aligned with their interests can be found.
- The organisations operating in and around the forest are the ones who provide activities. This enhances the ties between the people and the participating organisations.
- Bringing all stakeholders together in a festive setting forms a great opportunity for exchanges between people who would not communicate otherwise.

### Tips & tricks

- Choose a yearly recurring date that is known by all the partners to be present and plan their activities. The Day of the Sonian Forest always takes place on the 3rd Sunday in October.
- Invite possible new partners as visitors so they may participate in the next edition.
- Make sure you have extra guides on hand (flying people/guides) for activities where you don't have to register.
- Taking into account major holiday periods, these are not the best moments to bring together partners to oversee the organization or to communicate.
- Try to reach people who would normally not be willing to attend this day. Also through cultural projects (museums, expo, music, etc.).
- Easily add up the visitors present by providing registration lists for several activities.

Organizing feedback moments with participants to gather elements to finetune the event as a whole.



Figure 48: © Zoniëndog Sport



### 5.3.4. International World Heritage Youth Gathering – City of Angermünde, Germany

#### Summary

In autumn 2023, the City of Angermünde submitted a project for Erasmus funding to organise an international world heritage youth gathering at the component parts Grumsin, located next to Angermünde city and Jasmund at the Baltic Sea.



Figure 49: © City of Angermünde

#### The message

Youth groups with young participants (15-17 years old) from 6 World Heritage Beech forest countries will come together in Angermünde and Jasmund for 10 days during the summer holidays to spend time in old-growth forests, learn about their values, celebrate their existence and experience cultural exchange and international cooperation.

#### Logistics

The message that the City of Angermünde was looking for youth groups to participate in a project was spread in the network of the world heritage and personal contacts to yearlong partners within the European Beech forest network were activated. In the end, the proposal was submitted by partner organisations from Slovenia, the Czech Republic, Bulgaria, Ukraine, Germany and Italy to the National Erasmus Agency for Youth.

#### Advantages of this approach

The concept can be adapted to other countries so that the international youth gathering can be implemented in different countries after Angermünde.

The activity is a unique opportunity for the youth of the region to participate and engage in a multilateral international event in their region and makes their own natural treasures more interesting. A big special and international event will have a positive outreach to the region.

#### Tips & tricks

- 🍃 Use existing partner contacts via previous projects and the World Heritage network.
- 🍃 Acceptance for funding/ co-funding might be higher for a special big international gathering event.

### 5.3.5. Yearly programme for local school partnerships

#### Summary

Development and testing of a local school partnership concept (local school – local old-growth forest) with a yearly programme within the Life Prognoses-Project.



Figure 50: Excursion with a school group. © City of Angermünde.

#### The message

The goal of the yearly programme is to engage school children from Angermünde and make the city forest and heritage site on their doorstep accessible to them. Despite their proximity to it, many of the children don't really know the forest. The yearly programme aims for age classes 1-4 to get a personal connection to the city forest of Angermünde (in ownership of the city) and experience the forest including its ecosystem services in different seasons and with different actors related to the forest with different perspectives. The city forest of Angermünde contains extensive areas of old-growth stands of beech and oak.

The age classes 5 & 6 will get to know the World Heritage beech forest as a special highlight of the region.





Figure 51: © City of Angermünde.

### Logistics

The first step was to find an interested school with whom to develop and conduct the local school partnership with a yearly programme.

The second step was to find and coordinate the local actors related to environmental education and forests (e.g. ranger service of the Biosphere Reserve, forester of the city forest, federal forest administration, nature conservation NGO, ...) to develop activities in the frame of a yearly school programme with the interested school.

The yearly programme had to be worked out

- 1) in terms of contents of the activities provided by single actors and
- 2) organisationally to agree dates with the school and local actors related to environmental education and forests, as well as to organize transport.

### Advantages of this approach

- The yearly programme can be repeated with the local actors as a pilot and revision were implemented and the second round was started
- Contacts and organisational frame are established
- Financial resources for transport are planned in the long term by the city administration's department for education.





Figure 52: © City of Angermünde.

### Tips & tricks

- Establish the programme with local actors active in the field of environmental education and forests to ensure that it can also be implemented after the project's lifespan
- Plan for financial resources for transport in the long term by the city administration's department for education already in place.



### 5.3.6. Bilateral international exchange for schools – City of Angermünde, Germany & Paclenika National Park, Croatia

#### Summary

Around 27 school children from different schools (1 from Croatia, 2 from Angermünde) between 13 and 15 years old spend a week at each other's local world heritage component part.



Figure 53: © City of Angermünde.

#### The message

The aim is to bring the children in contact with old-growth forests and world heritage while providing valuable information about these forests and their importance. The aim is to bring the children in contact with old-growth forests and world heritage as well as support cultural exchange. Experiencing the international importance of the World Heritage through the exchange makes them more aware of their own nature and its value. During the activities, children are provided with valuable information about these forests and their importance.

CANG implemented a pilot via BEECH POWER and secured continuation now via Erasmus funding for youth exchange cofinanced by the federal state ministry.





Figure 54: © City of Angermünde.

### **Logistics**

Find interested schools, organize Erasmus and local funding, and organize travel to the partner country and programme in the home country.

### **Advantages of this approach**

Can be repeated quite easily if funding is secured.

Represents a special school activity as it involves teachers and schools. It is a special international outreach activity for the municipalities offered to their children.

Possibility to build long-term partnerships between schools, teachers and municipalities.

### **Tips & tricks**

Fundraising for this activity is essential as one visit and return visit for the group of children and teachers including organisational staff costs sums up to around 50.000 €.



### 5.3.7. Educational Week for schools – City of Angermünde, Germany

#### Summary

Development and testing of a 5-day school programme for schools spending a project week in the area close to the World Heritage Beech Forest Grumsin. During the BEECH POWER project a pilot World Heritage week was developed and implemented with a local school – to implement this programme resources for organization and external workshops are needed or covered by the school. During the Life Prognoses project, an overview of possible activities during a 5-days stay close to the World Heritage without a large amount of additional financial resources is prepared and a programme proposed for schools from the region or farther away to visit the region and the area.



Figure 55: © City of Angermünde.

#### The message

The goal of World Heritage Education Week is to engage the youth and make the heritage site accessible to them and the region attractive to be visited by schools.

Throughout this pilot WH week, 15 students between 13 and 15 years old had the opportunity to explore the World Heritage Site on their doorstep. The activities included meeting important actors from the region, becoming musically and artistically creative, and spending a wonderful time together in nature. Further, the students also got to know the challenges that such a World Heritage Site entails, discussed the importance of the forest in our world today, and their responsibility in its protection.



## Logistics

Distribute information about WH educational offers and motivate schools to visit the region/ area and spend time on that topic.

During the pilot, the schools did not have to organize much themselves, for the actual situation of schools, there is no institution holding responsibility for the organisation and implementation of weekly programmes. Just daily programmes are offered e.g. by the ranger service, so the schools would have to organize the combination of the offers themselves as well as transport etc.

Dates with schools have to be set quite a long time before.

Good experience with involving partners from practice (e.g. ranger service) as well as local actors and teachers ensuring that the programme and its content fits best into the school curriculum and meets the school's expectations, needs and wishes.

For the educational week with the local school (without accommodation), a total budget of 1.550 Euros was spent:

- 🌿 600 Euros for food (lunch and snacks for the pupils and teachers' class for one week),
- 🌿 600 Euros for transport on two days (the other 3 days we were cycling),
- 🌿 350 Euros fee for external educators

The working time for the organisation is not covered here and is assessed as the key point for the attractiveness of the activity.

By scanning the QR code on this page, you will be directed to the video concerning the education week.

## Advantages of this approach

- 🌿 Creating a larger pool of young people who are interested in forests: One of the main questions in awareness-raising generally is how to reach less-interested people. The idea is to invest in kids to create a larger pool of interested people. For this, more intense time related to specific topics like old-growth forests can create experiences and deeper understanding that people do not forget as fast as a single day.
- 🌿 Having conducted the WH educational week as a pilot project, the programme is there and could be repeated– the staff resources for its organisation and implementation after the project lifetime are not ensured and actually, one key point why it is not repeated.
- 🌿 CANG has the objective to mainstream this educational offer in Angermünde. Providing all schools in Angermünde with the opportunity to participate in such an educational week in the forest. This was a very successful activity to get young people involved and connected with "their" forest.
- 🌿 Alternative means of communication, such as music, facilitate communication with particular groups that are hard to reach: we got to know new methods and games to work with target groups that are more difficult to reach: The activity "music in the forest", which was part of the programme, proved to be a convenient approach to work with people with disabilities or target groups that do not speak German (the language of music can be "spoken" by everybody.)





### Tips & tricks

- At least in Germany, public schools need a longer lead time for getting involved in activities in comparison to private schools.
- In general, a good time for such an educational week is in the last week before the summer holidays as most schools (at least in Germany) conduct a project week in that time. It is recommendable to use already existing structures (e.g. already existing project weeks at the schools) for offering such extracurricular educational offers trying to incorporate them into the school curriculum.
- Organisational support for preparing and implementing is key for the schools as teachers do not have capacities to invest much time in organising.





# Inventory

6



## 6.1. Information about old-growth forests in Europe

### 6.1.1. Mapping and assessment of primary and old-growth forests in Europe

**Published** 21 April 2021

**Authors** Barredo, J., Brailescu, C., Teller, A., Sabatini, F.M., Mauri, A. and Janouskova, K.

**Access** <https://publications.jrc.ec.europa.eu/repository/handle/JRC124671>

**Abstract** This report presents an assessment of the knowledge and documented spatial data on primary and old-growth forests in the EU, as well as in some neighbouring countries. The EU's biodiversity strategy to 2030 recognises the value of primary and old-growth forests, and calls for their strict protection.

This report provides a knowledge base contributing to the process of developing guidelines for the definition, mapping, monitoring and strictly protecting all the EU's remaining primary and old-growth forests. This process is coordinated by the Working Group on Forest and Nature (sub-group of the Coordination Group on Biodiversity and Nature), which brings together representatives of the forestry and nature conservation national authorities and relevant stakeholders.

The following main conclusions are drawn:

- Primary and old-growth forests in the EU are rare, small and fragmented.
- These forests represent below 3% of the total forest extent of the EU.
- Despite the small extent, primary and old-growth forests are of paramount importance for biodiversity and provide critical ecosystem services.
- The protection of these forests represents a win-win solution for biodiversity conservation and climate change mitigation.
- About 90% of the reported primary and old-growth forests in the EU is located in Sweden, Bulgaria, Finland and Romania.
- The mapped area of primary and old-growth forests in the EU is ~1.35 million hectares, however there is a pronounced mapping deficit estimated at ~4.4 million hectares, which is a total area bigger than the size of the Netherlands.
- About 93% of the mapped primary and old-growth forests are part of the Natura 2000 Network, and 87% are strictly protected. However, these figures should be considered with caution due to the mapping deficit calculated in this study, and to the unclear legal framework on strict protection.

The analysis of the information and data gathered in this study concluded that strict protection of primary and old-growth forests is an urgent priority requiring robust and up-to-date spatially-explicit data, and an efficient monitoring system for safeguarding their

integrity. This will be possible through a strong partnership with all the parties involved, including land owners, nature conservation organisations, local and regional authorities, and the local communities.

### 6.1.2. European Primary Forest Database v2.0

**Published** 17 August 2021

**Authors** F. M. Sabatini et al.

**Access** <https://www.nature.com/articles/s41597-021-00988-7#Abs>

**Abstract** Primary forests, defined here as forests where the signs of human impacts, if any, are strongly blurred due to decades without forest management, are scarce in Europe and continue to disappear. Despite these losses, we know little about where these forests occur. Here, we present a comprehensive geodatabase and map of Europe's known primary forests. Our geodatabase harmonizes 48 different, mostly field-based datasets of primary forests, and contains 18,411 individual patches (41.1 Mha) spread across 33 countries. When available, we provide information on each patch (name, location, naturalness, extent and dominant tree species) and the surrounding landscape (biogeographical regions, protection status, potential natural vegetation, current forest extent). Using Landsat satellite-image time series (1985–2018) we checked each patch for possible disturbance events since primary forests were identified, resulting in 94% of patches free of significant disturbances in the last 30 years. Although knowledge gaps remain, ours is the most comprehensive dataset on primary forests in Europe, and will be useful for ecological studies, and conservation planning to safeguard these unique forests.

### 6.1.3. Letter: Protect old-growth forests in Europe now

**Published** 4 May 2023

**Authors** Mikoláš et al.

**Access** <https://www.science.org/doi/10.1126/science.adh2303>

**First paragraph** Old-growth forests harbor high and unique biodiversity, store vast amounts of carbon, are important for water and nutrient cycling, and constitute a unique element of natural heritage (1). In the European Union, old-growth forest protection is now mandated by the EU Biodiversity Strategy for 2030. However, almost 3 years after the strategy's adoption, stakeholders and policymakers are still discussing definitions and legislative mechanisms, while old-growth forests continue to decline at alarming rates (2–4). (Mikoláš et al. 2023)





## 6.2. Publications about awareness raising and scientific outreach

### 6.2.1. Europarc Knowledge Hub

**Authors** Europarc Federation

**Access** [Knowledge Hub \(europarc.org\)](https://www.europarc.org/knowledge-hub/)

**Description** The EUROPARC Knowledge Hub is a vast repository of resources on environmental topics that concern Protected Area management in Europe.

Nurtured predominantly by members of the EUROPARC network, this hub provides the opportunity to exchange experiences and knowledge in order to collectively support each other in finding solutions to overcome some of the challenges that managers of Protected Areas face. ("Knowledge Hub" n.d.)

#### Relevant toolkits and case studies:

- Capacity Building & Training
- Communication and promotion
- Community involvement
- Environmental education
- Promotion of natural assets
- Sustainable tourism
- Visitors management
- Volunteering
- Youth

### 6.2.2. The European Nature Protection Toolkit

**Published** February 2022

**Authors** Directorate-General for Environment (European Commission)

**Access** <https://op.europa.eu/en/publication-detail/-/publication/e33a1119-8fa2-11ec-8c40-01aa75ed71a1>

**Description** Besides being beautiful, Europe's nature is of great importance on so many levels to all of us and this Toolkit will help your students understand why. It will lead us on a journey that starts with getting down on our hands and knees to look at the plants and animals that inhabit Europe's natural areas. We will talk about biodiversity - "What is biodiversity?" - as well as introduce some of the basic scientific notions that underpin environmental science. We will ask questions such as "What is a species?", "What is a habitat?" and "What is an ecosystem?", as well as "How do they work?" and "Why are they important?". The students will learn to communicate about nature as well as about Europe's shared natural heritage. The Toolkit provides resources for finding and recognising interesting and important plants, animals and habitats near you. And in addition to identifying species and habitats, your students will also learn more about what nature means to them personally, and why they feel it is important. Inspiring students by what is around them can be a real first step in engaging them with nature in a meaningful way.

### 6.2.3. For conservationists, crowdfunding sites raise both funds and awareness

**Published** 28 January 2019

**Authors** Emily Clark

**Access**

[For conservationists, crowdfunding sites raise both funds and awareness \(mongabay.com\)](http://mongabay.com)

**Summary**

- A new study analyzes the use of online crowdfunding platforms for conservation efforts across the globe. Low-income countries are benefiting from supplementary funds for the conservation of biodiversity as a result of crowdfunding efforts thousands of miles away.
- As with traditional sources of conservation funding, however, much of the capital raised through crowdfunding goes toward a handful of "charismatic" species, including elephants and wolves.



## 6.3. Relevant European strategies and guidelines

### 6.3.1. The European Green Deal

**Published** 11 December 2019

**Authors** European Commission

**Access** [EUR-Lex - 52019DC0640 - EN - EUR-Lex \(europa.eu\)](#)

[European green deal - Publications Office of the EU \(europa.eu\)](#)

**Summary** The European Green Deal is a programme outlined in the political guidelines of the incoming President of the European Commission, Ursula von der Leyen. It aims to make Europe the first climate-neutral continent by 2050, while boosting the competitiveness of European industry and ensuring a just transition for the regions and workers affected. Preserving Europe's natural environment and biodiversity, a 'farm to fork' strategy for sustainable food, and a new circular economy action plan are other key elements. Executive Vice-President Frans Timmermans will be in charge of leading and coordinating the work on the European Green Deal. A Commission communication on the matter is expected on 11 December, ahead of the next European Council meeting, starting the following day. The European Parliament has scheduled a debate on the European Green Deal in an extraordinary plenary session on 11 December 2019 (Erbach 2019).

### 6.3.2. EU Biodiversity Strategy for 2030 – Bringing nature back into our lives

**Published** 19 May 2021

**Authors** European Commission, Directorate-General for Environment

**Access** <https://op.europa.eu/en/publication-detail/-/publication/31e4609f-b91e-11eb-8aca-01aa75ed71a1>

**Summary** The EU Biodiversity Strategy for 2030 sets out a truly ambitious and far-reaching programme of measures to halt and reverse biodiversity loss in the EU and across the globe. The challenge ahead is daunting and our ambition high, but it is actually not a matter of choice: halting biodiversity loss is a necessity for a stable future on this planet, and a socioeconomic imperative to deliver the European Green Deal. In preparing the EU Biodiversity Strategy we drew on a vast amount of scientific evidence on biodiversity loss, especially the landmark 2019 IPBES report, and evidence is growing by the day. The 2020 'State of Nature in the EU' report found that 81% of EU-protected habitats and 63% of EU-protected species are in "poor" or "bad" conservation status. Overall, Europe's protected habitats and species continue to decline at an alarming rate because the multiple pressures they face are simply too great to enable their recovery. Without decisive action, this continued loss will have massive economic repercussions. The latest studies confirm that over half of global GDP is dependent on high-functioning biodiversity and ecosystem services and that globally, one-fifth of countries are at risk of their ecosystems collapsing, compromising food security, clean water and air, and flood protection. This is why the EU Biodiversity Strategy is now a central element of both the EU Green Deal and the EU Recovery Plan. Its ambitious targets for nature protection and restoration should lead to a better balance between nature and economic activities, contributing to a transformational change that will filter through to all parts of society, ensuring the health and prosperity of people and nature. We

can make this happen if we take a whole-society approach, with action from all stakeholders across all sectors and at all levels. We are working to bring everyone on board to deliver the Biodiversity Strategy – land owners and land users, such as farmers, foresters, fishers; businesses and consumers; civil society organisations, and citizens across the EU. To this end, one important part of the Strategy focuses on strengthening the EU's biodiversity governance framework to make it as transparent and participatory as possible. Enabling also needs funding; we are using all tools at our disposal to unlock, as a minimum, EUR 20 billion/year for biodiversity through various sources, including all EU funds, national and private funding, supported by tools such as the Taxonomy, improved biodiversity tracking for EU funding, Invest EU, and much more besides. With the Biodiversity Strategy, the EU is leading the way. But the biodiversity crisis is a global crisis. That is why we will negotiate an ambitious global framework to protect biodiversity across the globe at the next Conference of Parties of the UN Biodiversity Convention in China. Working together with the Member States and the EU External Action Service, we will use the full diplomatic weight of the EU to lead the way for global action. We owe it to nature, to people and to future generations.

### 6.3.3. New EU Forest Strategy for 2030

**Published** 14 July 2021

**Authors** European Commission, Directorate-General for Environment

**Access** <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021DC0572>

**Summary** Forests are essential for our health and wellbeing, and the health of the planet. They are rich in biodiversity and are hugely important in the fight against climate change. The new EU forest strategy for 2030 is one of the flagship initiatives of the European Green Deal and builds on the EU biodiversity strategy for 2030. The strategy will contribute to achieving the EU's biodiversity objectives as well as greenhouse gas emission reduction target of at least 55% by 2030 and climate neutrality by 2050. It recognises the central and multifunctional role of forests, and the contribution of foresters and the entire forest-based value chain for achieving a sustainable and climate-neutral economy by 2050 and preserving lively and prosperous rural areas. The strategy is accompanied by two staff working documents: Staff Working Document on the Stakeholder Consultation and Evidence Base and Staff Working Document on the 3 Billion Tree Planting Pledge for 2030.

#### **Objectives**

The strategy sets a vision and concrete actions to improve the quantity and quality of EU forests and strengthen their protection, restoration and resilience. It aims to adapt Europe's forests to the new conditions, weather extremes and high uncertainty brought about by climate change. This is a precondition for forests to continue delivering their socio-economic functions, and to ensure vibrant rural areas with thriving populations. (Directorate-General for Environment (European Commission) 2023a)



#### 6.3.4. Guidelines for Defining, Mapping, Monitoring and Strictly Protecting EU Primary and Old-Growth Forests

**Published** 21 March 2023

**Authors** European Commission, Directorate-General for Environment

**Access** [https://environment.ec.europa.eu/publications/guidelines-defining-mapping-monitoring-and-strictly-protecting-eu-primary-and-old-growth-forests\\_en](https://environment.ec.europa.eu/publications/guidelines-defining-mapping-monitoring-and-strictly-protecting-eu-primary-and-old-growth-forests_en)

**Description** These guidelines provide practical guidance to national policy- and decision-makers that will allow them to effectively identify and protect the remaining primary and old-growth forests in the EU. In the EU Biodiversity Strategy, there is a commitment to strictly protect all remaining EU primary and old-growth forests. The guidelines thus set out criteria for identifying primary and old-growth forest areas based on a list of indicators or principles. A timeline is suggested for their mapping and strict protection. (Directorate-General for Environment (European Commission) 2023c)



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7



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