State Party Report

on the State of Conservation of the Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe

submitted by Austria on behalf of the States Parties
Albania, Austria, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czechia, France, Germany, Italy, North Macedonia, Poland, Romania, Slovakia, Slovenia, Spain, Switzerland and Ukraine,
Reference Number: 1133ter
in response to World Heritage Committee Decision *44 COM 7B.99*

[for submission by 1st February 2022]

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Glossary

To ensure a common understanding of the forest-specific terms in this report we would like to provide the definitions which can be found in **annex 1** (*7.1 Glossary of Forest management terms used by the UNESCO WHS "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe*").

This Glossary of Forest management terms is a list of definitions in order to create a common language and joint understanding for the management of the property and the buffer zone of the WHS "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe".

In an attempt to reach this common understanding, several terms are defined using easy to understand and metric parameters, based on international and regional forestry manuals. We are aware that these definitions may diverge from legally binding definitions in the respective States Parties. The below applied definitions and restrictions do not replace or abolish official definitions and restrictions included in existing national or regional legislation.

1. Executive summary of the report

This State of Conservation Report is submitted by Belgium and was prepared by the States Parties Albania, Austria, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czechia, France, Germany, Italy, North Macedonia, Poland, Romania, Slovakia, Slovenia, Spain, Switzerland and Ukraine as requested by UNESCO in the World Heritage Committee **Decision 44 COM 7B.99**. Each chapter of the report deals with and discusses different requests and questions raised in the above mentioned decision. **Decision 44 COM 8B.32** will be treated in the State of Conservation report of December 2023 as asked in paragraph "44 COM 8B.32- 11".[1] The series was extended in July 2021 with six States Parties (Bosnia-Herzegovina, Czechia, France, Poland, North Macedonia and Switzerland).
As requested by the WH Committee, **the inventory of possible harmful forest operations** was updated and submitted to the WH centre on 26 November 2021, and **a technical workshop** will be organised during spring 2022.

The results of the process of developing a **guidance document** 'Management of the property and buffer zone zonation' are summarised and the submitted version of the document is included in annex 2 of this report.

The update of the forest management operations in **Romania** in the buffer zone for 2020 and 2021 can be found in annex 2 of this report. The rehabilitation of the national road 66A in Romania, has been put on hold temporarily, until clarification of the steps to be followed.
Slovakia would also like to announce that the Integrated Management Plan (IMP) for the Slovak components of the property is at the final stage, with stakeholder consultation and approval by the Ministry of the Slovak Republic planned throughout 2022.
The Wilderness Area Dürrenstein-Lassingtal in **Austria** was expanded by 3500 ha in August 2021. The administration of the Wilderness Area Dürrenstein-Lassingtal is also working on a new management plan for the entire protected area. In 2021, the comprehensive Management Plan for the Jizera Mountains Beech Forest National Nature Reserve was approved by the Ministry of the Environment of the **Czech Republic**. Both Public Institutions (Paklenica National Park Public Institution and Northern Velebit National Park Public Institution) managing the **Croatian** component parts are currently involved in the process of developing a new Management Plan for the next ten-year period. **Italy** provided information of the impact of the forest fire in the municipality of San Luca, east of the borders of the UNESCO Valle Infernale component. **North Macedonia** provide an update of their legislative process. The management plan of the Natura 2000 site UNESCO Grosii Tiblesului and the management plan of the Natura 2000 "Codrii Seculari de la Strimbu Baiut in **Romania** are under development. Currently two States Parties of the existing World Heritage Property are preparing **minor boundary modifications** in two current component parts: Dürrenstein (Austria) and Paklenica (Croatia). Austria will submit the boundary modifications in 2022. **Belgium** is reporting on the process to **enlarge component parts in the Sonian forest**. A current status of the discussion on the enlargement of the Walloon component is presented, as well as the status on the construction of a green bridge which will connect the two Brussels component parts Grippensdelle A and B, so that one component part exceeds the 50-ha limit. The programme on the remodelling of the Brussels ring road is mentioned. **Switzerland** provided an update on the activities in Component "valli di Lodano, Busai e Soladino" and the Component "Bettlachstock".
In recent years there have been important changes in **Ukrainian** nature protection legislation, which were primarily aimed at conservation of primeval and old-growth forests, as well as improvement of the conditions for conservation of natural complexes in protected areas.

[1] Decision 44 COM 8B.32- 11-Further requests the States Parties to submit to the World Heritage Centre, by 1 December 2023, a joint report on the state of conservation of the property as a whole, and the implementation and the review of boundary and buffer zone consistency, for examination by the World Heritage Committee at its 47th session

2. Response to the Decision of the World Heritage Committee

The following chapters address questions and requests raised by UNESCO in World Heritage Committee **Decision 44 COM 7B.99** paragraph by paragraph. The paragraph discussed is quoted at the beginning of the relevant chapters; the answers and arguments follow this citation.
This report shows the current situation within the World Heritage property and the future management of the component parts and their buffer zones.
Decision 44 COM 8B.32 will be treated in the State of Conservation report of December 2023 as asked in paragraph "44 COM 8B.32- 11".[2] The series was extended in July 2021 with six States Parties (Bosnia-Herzegovina, Czechia, France, Poland, North Macedonia and Switzerland).

2.1 Introduction

Decision: 44 COM 7B.99 of the World Heritage Committee states the following:
The World Heritage Committee,

1. Having examined Document WHC/21/44.COM/7B.Add,
2. Recalling Decisions **42 COM 7B.71** and **43 COM 7B.13**, adopted at its 42nd (Manama, 2018) and 43rd (Baku, 2019) sessions respectively,
3. Takes note of the findings of the 2019 joint World Heritage Centre/IUCN Reactive Monitoring mission, and requests the States Parties of Albania and Romania to implement all mission recommendations, and all States Parties of this property to jointly implement the following mission recommendations:
    1. Conduct on-the-ground assessments in the buffer zones and component parts where impactful forestry interventions such as clear-cuts and shelterwood cutting have been permitted, to ascertain the extent to which the effective protection of the respective components might be compromised and the Outstanding Universal Value (OUV) negatively affected,
    2. Enhance the connective and protective functions of the buffer zones and strengthen the integrity of the property by minimizing the use of forestry interventions.
    3. Ensure that any interventions avoid interference with the natural processes of the beech forest ecosystem taking into account the natural expansion of their surface and to strengthen their resilience,
    4. Support undisturbed natural processes in all components and their buffer zones through natural regeneration, pro-forestation, aging of forest stands beyond conventional rotation ages, and to not take any decision that may affect the dynamics of such processes after external natural or anthropogenic events, such as fire, within or near the property's components.
4. Welcomes the strict protection applied by the State Party of Albania in its respective components and their buffer zones, and invites other States Parties of this transnational property to consider this approach in the revision of buffer zone management as well as the on-going development of a Guidance document for the buffer zones of the property,

[2] Decision 44 COM 8B.32- 11-Further requests the States Parties to submit to the World Heritage Centre, by 1 December 2023, a joint report on the state of conservation of the property as a whole, and the implementation and the review of boundary and buffer zone consistency, for examination by the World Heritage Committee at its 47th session

in order to ensure that all buffer zones of the property serve as a functional additional layer of protection in line with the *Operational Guidelines*;

5. Appreciates the identification and protection of 2,000 ha of forests in the buffer zones of the Romanian components, however, noting with utmost concern that the current management of the Romanian components' buffer zones does not meet the requirements of the *Operational Guidelines* and may have negative effects on the integrity of the property, urges the State Party of Romania to fulfil its intention to limit interventions in buffer zones and approve new dedicated World Heritage national legislation aimed at safeguarding the OUV of the property;
6. Notes with concern the potential widening and paving of a forest track crossing the property and its buffer zone (national road 66A) as well as potential future activities related to hydropower facilities in the buffer zone in Domogled National Park in Romania, and thus also urges the State Party of Romania to abandon plans to upgrade the national road 66A inside and/or nearby the property, due to the potential impact of this project on the property's integrity and its OUV.
7. Also welcomes the amendment of the Act on Nature and Landscape Protection of Slovakia expanding non-intervention regimes, and notes that the State Party of Slovakia has submitted a significant boundary modification for its components of the property, which has been subject to the evaluation process.
8. Notes with serious concern the level of forestry operations which are currently permissible in the buffer zones of the property, and requests the States Parties of Spain, Romania, Germany, Italy and Ukraine to provide full and up to date details of these activities to the World Heritage Centre by **1 December 2021**, in order to make clear all the locations and the full list of potentially affected component parts and buffer zones, and to convene, in conjunction with the other States Parties, a subsequent technical workshop with IUCN and the World Heritage Centre to consider the means by which concerns over these activities could be resolved;
9. Reiterates its request in Decision **41 COM 8B.7** that special emphasis shall be given to appropriate buffer zone management in order to support undisturbed natural processes with special emphasis on dead and decaying wood, also notes the submission of the "Guidance document on buffer zone management and buffer zone zonation" for review by the World Heritage Centre and IUCN and further urges the States Parties to ensure that interventions are minimised in the meantime, and that the buffer zone Guidance is based on a strict and precautionary approach;
10. Finally requests the States Parties to submit to the World Heritage Centre, by **1 February 2022**, an updated joint report on the state of conservation of the property and the implementation of the above, for examination by the World Heritage Committee at its 45th session.

2.2 Decisions related to the inventory and monitoring of impactful forestry interventions (*Decision 44 COM 7B.99 – 3.1 and Decision 44 COM 7B.99 – 8)*

Update of inventory of possible harmful forest operations

The States Parties of Spain, Romania, Germany, Italy and Ukraine have provided **full and up to date details** of the possible harmful forest activities to the World Heritage Centre **on 26 November 2021**, in order to make clear **all the locations and the full list of potentially affected component parts and buffer zones**. The document can be found in **annex 3** (*7.3 Supplementary information on Forest management operations*)

Until the moment of submission no formal feedback from IUCN/Word Heritage centre has been received.

Possible harmful forest operations are not allowed in the property.
In a limited number of component parts some activities are allowed in the buffer zone under strict conditions (cf. table 15 in annex 3, which is copied here):

Table 15: Overview permissible operations in the buffer zones of the component parts. AsA: Allowed on specific areas, AsP: Allowed with special permission, GA: Generally allowed, AsAsC: Allowed on specific areas and special conditions –light demanding and non-native species.

State Party	Cluster/Component	Group fellings < 0,5 ha	Clear cuts > 0,5 ha	Group Shelterwood cuttings < 0,5 ha	Shelterwood cuttings > 0,5 ha	Comment
DE	Grumsin	AsA	No	No	No	Group felling is limited to 0.3 ha
ES	Hayedos de Ayllón – Castilla La Mancha	No	No	No	No	Thinning in pine stands that will be transformed to beech
ES	Hayedos de Ayllón – Madrid	No	No	No	No	Thinning in pine stands that will be transformed to beech
ES	Hayedos de Navarra	AsAsC *	AsAsC *	AsP	AsP	Shelterwood in beech forests, 100 m from the border of component. Clear cuts in pine to transform to beech stand
ES	Hayedos de Picos de Europa	No	No	No	No	Firewood by local community through thinning
IT	Abruzzo, Lazio & Molise NP	No	No	No	No	
IT	Monte Raschio	No	No	No	No	Thinning in pine stands that will be transformed to beech
IT	Sasso Fratino	No	No	AsP	AsP	Sanitary and salvation cutting possible
RO	Cheile Nerei-Beușnița	No	No	GA	No	
RO	Cozia	No	No	GA	No	
RO	Domogled - Valea Cernei	No	No	GA	No	
RO	Groșii Țibleșului	No	No	GA	GA	Allowed but will be phased out in new management plan
RO	Izvoarele Nerei	No	No	GA	No	
RO	Strâmbu Băiuț	No	No	GA	GA	Allowed but will be phased out in new management plan
UA	Uzhanski NNPk	No	No	No	No	

Technical workshop

A technical **workshop with IUCN and the World Heritage Centre,** in conjunction with the other States Parties, **will be convened in spring 2022.** The objective of this workshop is to discuss how the concerns over possible harmful forest management activities could be resolved.

Conduct on-the-ground assessments

The table above gives an indication on the locations where on-the-ground assessments might be useful and necessary.

During the technical workshop this topic will be discussed further with the experts of IUCN and the World Heritage Centre.

2.3 Decisions on appropriate buffer zone management *(Decision 44 COM 7B.99 – 3.2, Decision 44 COM 7B.99 – 3.3, Decision 44 COM 7B.99 – 3.4, Decision 44 COM 7B.99 – 4 and Decision 44 COM7B.99 – 9)*

Guidance document on buffer zone management and buffer zone zonation

Process since the last SOC report February 2020]

The land ownership, spatial design, legal protection status, and management regulation of the buffer zones in this complex serial transnational site were and are very diverse. To ensure the functionality of the buffer zone for each component part of the property and to harmonise the management approach, a process to develop a joint guidance document was started. The following activities have taken place since February 2020:

2020 (April)	Discussion of the current draft version of the guidance document at the Joint Committee Meeting (JMC) (online) (States Parties & coordination office).
2020 (Aug.)	Bilateral meetings with all States Parties to create a shortlist of the topics that still need further discussion among States Parties.
2020 (Oct.)	During the JMC-meeting of October 2020 the guidance document of the buffer zone management and buffer zone zonation was discussed. A shortlist of the topics that still need further discussion among States Parties was presented. The JMC decided to create two working groups to prepare possible solutions for these open-ended topics (online) (States Parties & coordination office).
2020 (Nov.)	A workshop was organised with technical experts to prepare “the status of the document” and “the construction of new infrastructure and the maintenance of existing infrastructure”.
2020 (Dec.)	A workshop was organised with technical experts with the aim to create a Glossary of Forest management terms to create a common language and joint understanding for the management of the property and the buffer zone of the WHS “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”.
2021 (Feb.)	A workshop was organised with technical experts to prepare content related to forest management. For most topics, a consensus was reached during the workshop. There is still a very limited number of topics that needs some clarification.
2021 (Feb.)	Bilateral meetings with Slovakia, Romania and some experts to clarify the final open topics on forest management.
2021 (March)	Update of the guidance document according to the workshop outcomes. Submission of the updated draft guidance document for feedback to the States Parties.
2021 (March)	Pre-JMC-meeting with all JMC-members to present the outcome of the workshops and to discuss the revised version of the guidance document.

2021 (April) Agreement on the submission of the updated version of the guidance document among all 12 States Parties at the JMC-meeting.

Appropriate buffer zone management

The results of the process of developing a guidance document (as described in the section above) are summarised in the guidance document on buffer zone management and buffer zone zonation, which is included in **annex 2** (*7.2 Guidance Document: 'Management of the property and buffer zone zonation*) to this report. This document was approved for submission to the World Heritage Centre during the Joint Management Committee Meeting in April 2021. This document contains the proposal on the rules and regulations for the management of the property and the buffer zone.

- Forest interventions are subject to strict conditions. (Cfr table 1 in annex 2 (7.2 Guidance Document: 'Management of the property and buffer zone zonation'))
- The concept of the separate buffer zones has been key to reach an agreement among the States Parties. The width of the protective buffer zone was augmented from 50 to 100 m and accepted by all States Parties. The function of these zones is to create a buffer between heavily used areas and the protected areas (inscribed property). The ecological processes need space to avoid external influence. It is important that de buffer zone provides an additional layer of protection for the property.
- We have made very important progress on adding old forest habitat features in the landscape buffer zone: > 30 m^3/hectare, 3 to 10% side aside areas, > 5 habitat trees per hectare.
- In order to move forward and to improve buffer zone management in the States Parties, it is crucial that we could start to implement the concept on the terrain after approval. To see whether the management principles work or not, we will develop a good monitoring system in the buffer zones.
- At this moment we have two versions of the guidance document: one in this SOC report which was send for feedback to IUCN/World Heritage Centre on 25 May 2021, and the other in the nomination dossier 1133 quarter (which is relevant for Bosnia-Herzegovina, Czechia, France, Poland, North Macedonia and Switzerland). As soon as the feedback from IUCN/world heritage centre is received, convergence will be sought with all States Parties in order to propose a common version.

After approval by the States Parties, the document was sent to IUCN/ World Heritage Centre on 25 May 2021.
No official feedback from IUCN/Word Heritage Centre has been received yet.

2.4 Decision on buffer zone management in Romania (Decision 44 COM 7B.99 – 5)

The update of the forest management operations in Romania in the buffer zone for 2020 and 2021 can be found in in **annex 3** *(7.3 Supplementary information on Forest management operations)* (More specifically in Paragraph Annex 3: Forest interventions in UNESCO natural site buffer zone in 2020 and 2021).

Taking into consideration the area of Domogled – Valea Cernei National Park (more than 60,000 ha) the State Party of Romania considers these interventions as not very intensive.
In the same time the updated Catalogue of Virgin and Quasi-virgin forests [3] contains in this area more than 13,000 ha of such forests (that are strictly protected) with large areas not included in UNESCO components or inside the National Parcs' strict protection/integral protection zones.

[3] http://www.mmediu.ro/articol/catalogul-padurilor-virgine-si-cvasivirgine-din-romania/4790)

The different layers of protected areas overlapped for Domogled – Valea Cernei National Park can be found in Map 1. This is an evidence of a low intensity forest management practices in the area of the National park.

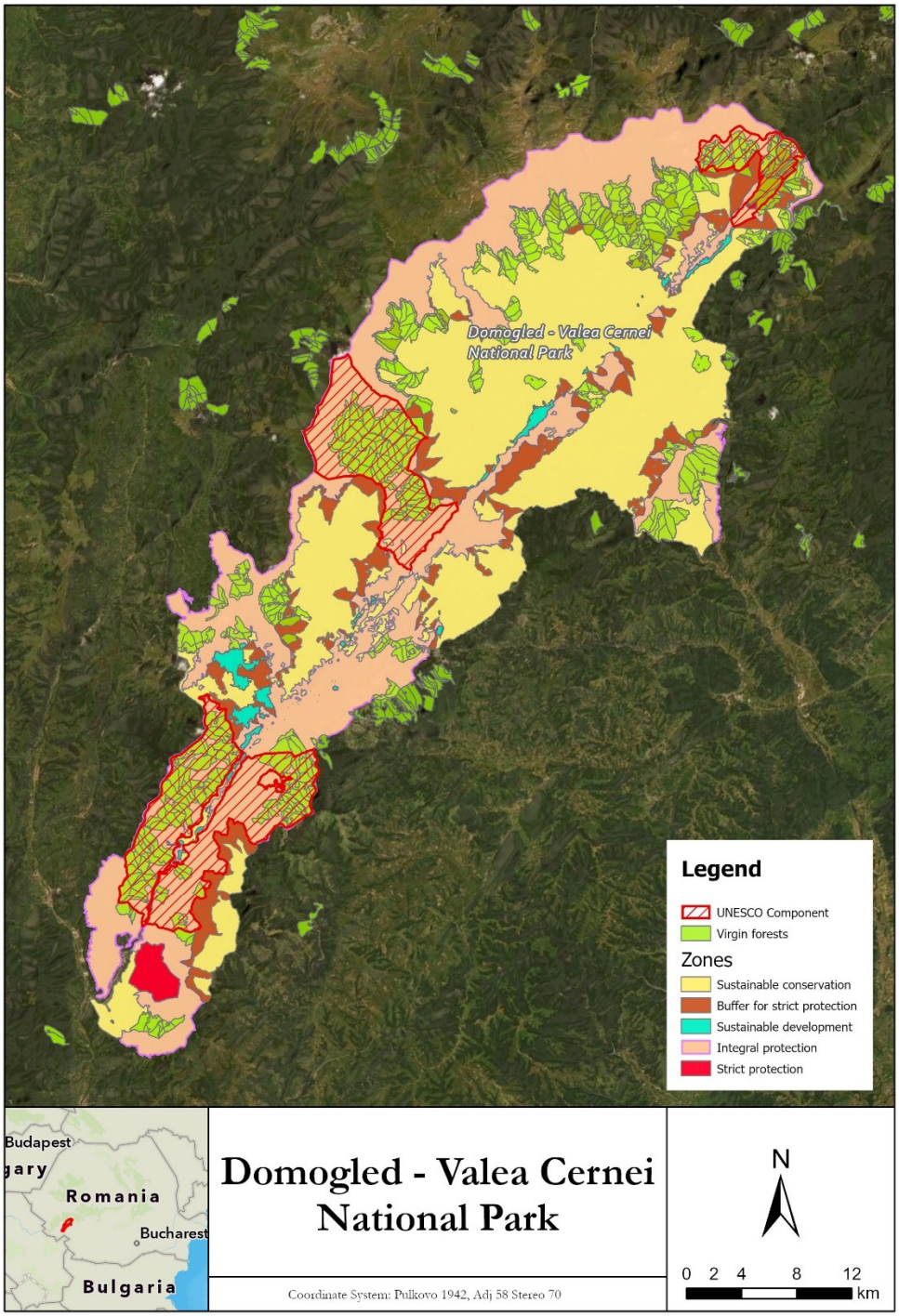

Figure 1: Different layers of protected areas for the Domogled-Valea Cernei National Park

For the buffer zone, in the vicinity of the components at less than 50 meters, the forest interventions are prohibited.
In addition, in the „Guidance document on buffer zone management and zonation" there is a proposed transition period, in order to ensure the transition from the current type of forest management to a less intensive one. Romania is in favour of such a transition period mainly because the regeneration processes of existing mature forest sites has already started during past decades and it doesn't make too much sense to stop these processes and move towards a different type of forest management in the middle of these rejuvenating process.

Recently Romanian Ministry of Environment, Waters and Forests announced a plan to expand the areas of non-intervention in Domogled – Valea Cernei National Park in order to reach a target of 75% non-intervention in this park. This process will take into consideration among other aspects the need to ensure that the OUV of UNESCO sites is protected.
Since 2018, through the Ministerial Order nr. 766, the forests inside the components are fully protected, being introduced in functional type "T I". The Order set up specific functional categories for forests inside the component and for the ones included in the buffer area, so the management system is clear and uniform for all areas in this situation all over the country.

Beside this, in 2021, the Ministry started a process to amend the Law of Protected Areas, so at the end of this process, UNESCO World Heritage Natural Site will have a more clearer legal status.

2.5 Decision on widening and paving of a forest track in Domogled (Romania) *(Decision 44 COM 7B.99 –6)*

The rehabilitation of the national road 66A, has been put on hold temporarily, until clarification of the steps to be followed.
The Ministry of Transports in Romania considers this as being a strategic road, so the State Party of Romania does not have yet a clear decision to abandon the plan of rehabilitation. The Ministry of Environment, Waters and Forests together with the Ministry of Transports will identify the best option in order to secure the Outstanding Universal Value of the component where this road is situated.

2.6 Decision on amendment of the Act on Nature and Landscape Protection of Slovakia *(Decision 44 COM 7B.99 – 7)*

The State Party of Slovakia appreciates the decision of the World Heritage Committee at its 44th session (44 COM 8B.32) by which the significant boundary modification of the existing component parts Vihorlat, Havešová Primeval Forest, Rožok, Udava and Stužica – Bukovské vrchy became approved. These newly delineated boundaries represent a comprehensive solution based on the results of primeval and ancient forest mapping that was prepared in the participatory process and was endorsed by all the stakeholders. After several years, finally all the necessary guarantees for the adequate protection and conservation of the Outstanding Universal Value (OUV) are provided for the Slovak components of the property including the implementation of the related legal provisions and management arrangements.

The amendment of the Act on Nature and Landscape Protection (n. 543/2002 Coll.) which came into force on the 1 January 2020 played a significant role in the process. It brings several changes to the system of nature protection in Slovakia and strengthens competencies of the State Nature

Conservancy in respective forest management and planning. It largely supported stricter protection regimes and very limited forest practices in the area of the property.

Since the last State of Conservation Report and since this amendment, Slovakia would like to announce, in conformity with Decision 42 COM 7B.71 – 5,[4] that the adequate long-term legal protection of its whole property area was completed by declaring the last three nature reserves. Nature Reserve Rydošová (88 ha) in the component Udava as well as Nature Reserve Vihorlatský prales (2,160 ha) in the component Vihorlat were approved by the Government of the Slovak Republic by its decision no. 507/2020 and no. 508/2020 dated 19 August 2020. Nature Reserve Veľký Bukovec (974 ha) in the component Stužica – Bukovské vrchy was approved by the Government of the Slovak Republic by its decision no. 475/2021 dated 31 August 2021. [5]

In conformity with Decision 41 COM 7B.4 (paragraph 4),[6] Slovakia would also like to announce that the Integrated Management Plan (IMP) for the Slovak components of the property is at the final stage, with stakeholder consultation and approval by the Ministry of the Slovak Republic planned throughout 2022.

3. Other current conservation issues identified by the States Parties which may have an impact on the property's Outstanding Universal Value

3.1 Albania

No current conservation issues have been identified.

3.2 Austria

WG Dürrenstein

The Wilderness Area Dürrenstein-Lassingtal was **expanded by 3500 ha** in August 2021. Because of the significant beech forests of the expanded area the boundaries of this component part of the World Natural Heritage should be adapted. A minor **boundary modification** of the World Heritage component part Dürrenstein to extend the property will be submitted by 1 February 2022.

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[4] Decision 42 COM 7B.71 - 5. Considers that the additional measures proposed by the State Party of Slovakia to provide legal protection of parts of the property which currently do not benefit from a non-intervention regime, including through designation of new nature reserves, are therefore of utmost urgency, and requests the State Party of Slovakia to expedite this process, ensuring legal protection from logging while continuing to involve and consult relevant stakeholders.

[5] decision no. 507/2020 – https://rokovania.gov.sk/RVL/Resolution/18648/1 (full Regulation https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2020/237/)
decision no. 508/2020 – https://rokovania.gov.sk/RVL/Resolution/18649/1 (full Regulation https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2020/234/)
decision no. 475/2021 – https://rokovania.gov.sk/RVL/Resolution/19452/1 (full Regulation https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2021/334/)

[6] 41 COM 7B.4 (paragraph 4) The Committee notes with concern the non-existence of Integrated Management Plan (IMP) for the Slovak components of the property; it repeats again its request to the Member state of Slovakia to ensure that until this issues is resolved by preparation, following the consultations with other Member states for this property, IMP for the Slovak components of the property aiming at nature protection and considering all international designations such as the World Heritage property, biosphere reserve, European diploma and Natura 2000 no logging operations are carried out within its boundaries and urges the Member state to ensure that no logging is carried out within the boundaries of the property once the plan is adopted.

The administration of the Wilderness Area Dürrenstein-Lassingtal is also working on a **new management plan** for the entire protected area. The new management plan will come into force in 2022 and will be valid for 10 years before it has to be renewed again. The contents of the management plan will be developed by the protected area administration in coordination with the landowners and the responsible federal states. The Wilderness Area Dürrenstein-Lassingtal is an IUCN approved protected area of category Ia = "Strict Nature Reserve" and Ib = "Wilderness Area". Therefore, the primary ambition of the management plan is to maintain biodiversity by not interfering with ecological processes.
In addition, the zonation of the World Heritage property and buffer zones and the guidelines of UNESCO will also be included in the management plan, in order to secure the OUV and the integrity of the World Natural Heritage “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”.

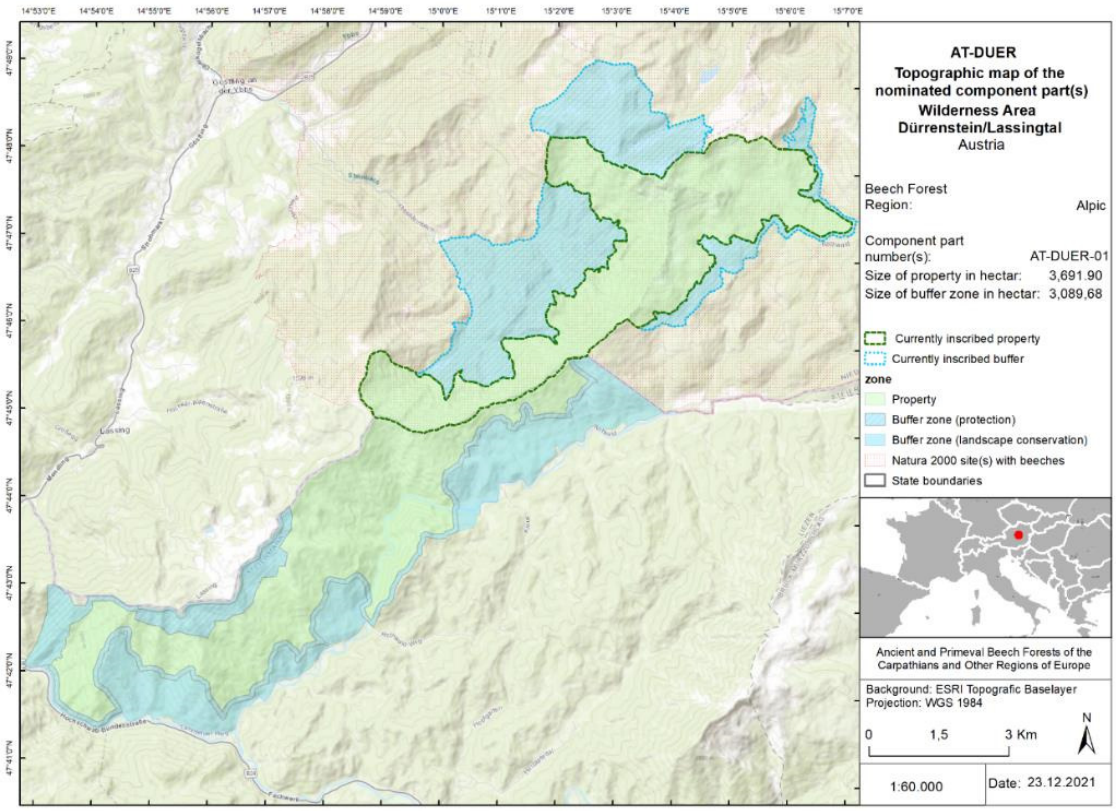

Figure 2: Map of the extended wilderness area Dürrenstein-Lassingtal in Austria.

3.3 Belgium

No current conservation issues have been identified.

3.4 Bosnia-Herzegovina

No current conservation issues have been identified.

3.5 Bulgaria

No current conservation issues have been identified.

3.6 Croatia

Both Public Institutions (Paklenica National Park Public Institution and Northern Velebit National Park Public Institution) managing the Croatian component parts are currently involved in the process of developing **a new Management Plan** for the next ten-year period. The management of the WH component parts and the buffer zones is integrated in this document.

The activities of **species and forest ecosystem monitoring and research** are already ongoing and are also planned in the Management Plans of both Public Institutions. Special attention has been paid to planning the activities of research and monitoring of groups of organisms which are good indicators of healthy ecosystems, species and groups of organisms that are still data deficient and Natura 2000 species (which are also valuable indicators of healthy ecosystems).

Additionally, both Public Institutions are currently involved in **the development of the Forest Protection, Care and Restoration Programme** which was prescribed by the Nature conservation Law (NN 80/13, 15/18, 14/19, 127/19). The Programme covers the need for equalisation of the methodology of data collection on forest ecosystems on a national level.

3.7 Czechia

No current conservation issues have been identified.

3.8 France

No current conservation issues have been identified.

3.9 Germany

No current conservation issues have been identified.

3.10 Italy

A series of about 110 fires occurred in July 2021 in the area surrounding Aspromonte National Park in the Calabria region.

One of the most challenging outbreaks was the one recorded in the municipality of San Luca, east of the borders of the UNESCO Valle Infernale component, within the State Reserve managed by the Carabinieri Forestali biodiversity department.

Three different Canadair hydroplanes were active in the area hit by the fires. A regional helicopter was added to these aircrafts. Volunteers from the National Civil Protection Department, two tank trucks and several teams of workers, a total of about one hundred men, were employed on the ground. Within the State Reserve, the fire was successfully controlled by the Carabinieri Forestali and volunteers, which minimized the effects on the UNESCO Valle Infernale forest.

Analysis is underway to evaluate the spread of fire within the UNESCO component and the possible impact on ecosystems. Preliminary fire analysis indicates that a small part of the UNESCO component, the property, was affected by the fire.

Most of the old-growth forest habitat in the property area was unburned. The areas burned experienced low severity burns while less than 1% of the area experienced moderate-high burns.

We found that most of the fire appears to have occurred in the buffer zone. In the buffer area, 86.36% of the area was unburned and 1.91% was a moderate-high burn. Further analysis on the spot is on going.

3.11 North Macedonia

The World Heritage Committee at its extended 44th session, held from 16 to 31 July 2021 in Fuzhou (China) adopted the decision (44 COM 8B.32) to inscribe the primeval beech forest Dlaboka Reka as a component part of Ancient and Primeval Beech Forests in Carpathians and Other regions of Europe.
In response to the decisions of the World Heritage Committee the National Authority for protection of the cultural heritage under the Ministry of environment and Spatial Planning which is the central guiding organ for protection of national heritage in the Dlaboka Reka National Park Mavrovo a strict non-intervention management is going to be applied.
Protected areas, especially national parks, represent the most representative part of the national natural heritage in North Macedonia.
As early as 1948, due to the natural beauty, historical and scientific significance of forests and forest areas, part of mountain Pelister was declared as a national park, which also represents the first protected natural good in Macedonia and the former SFRY.
It is important to note the proclamation of forest areas around Mavrovo Lake as National Park (1949) and the proclamation of Mount Galichica as National Park (1958).
To prioritize nature conservation actions, including the management of Protected Areas in the Republic of North Macedonia in accordance with the Law on Nature Protection, the Government of the Republic of North Macedonia in 2018 adopted the National Strategy for Nature Protection with an Action Plan (2017-2027) and the National Biodiversity Strategy with Action Plan (2018-2023).
With the adoption of the 2005 Law on Nature Protection, intensive efforts to align national legislation with EU legislation in the field of nature protection have begun. According to this law, the valorization and revaluation of the protected areas natural values and new approaches to protected area management have begun.
According to Article 65 of the Law on Nature Protection, the system of protected areas is established to protect biodiversity within natural habitats, processes that occur in nature, as well as abiotic features and landscape diversity.
By proclaiming the area protected it acquires the status of natural heritage.
Article 66 of the Law on Nature Protection has adopted six (6) categories of protected areas, harmonized with the International Union for Conservation (IUCN) categorization:

- Category I – (Ia) Strict Nature Reserve (SNP), (Ib) Wilderness Area (WA),
- Category II – National Park (NP),
- Category III – Monument of Nature (MN),
- Category IV – Nature Park (NP),
- Category V – Protected Landscape (PL) and
- Category VI – Multipurpose Area (MPA).

In the article 92 in the Law on Nature protection (Official Gazette 67/2004) Strict Natural Reserves, National Parks and Natural Monuments shall be proclaimed as protected area by law.
On the other side, Nature Parks, Protected Landscapes and Multipurpose Areas shall be proclaimed protected areas with the decision from the Government of the Republic of North Macedonia.
By its proclamation the protected area shall acquire the status of natural heritage.
The proclamation act for the protected area shall contain title of the protected area, category of protection, geographical characteristics and other basic features, the boundaries of the area, zoning of the protected area, regime of protection, management entity and other issues stipulated by the proclamation act.
By the act for proclamation referred to in Article 92, the following zones may be established in the protected area:

- Zone of strict protection.
- Zone of active management.
- Zone of sustainable use; and

- Buffer zone.

Zone of strict protection shall be part of the protected area of highest interest for protection, characterized by authentic, unchanged ecosystem characteristics, or slightly changed because of the traditional management practices.
Within the strict protection zone, it shall be distinguished:

- Authentically natural areas, with no human interventions at all; and
- Areas with limited intervention, where the traditional manner of management is still present and serves the maintaining of the natural values of the zone.

Scientific research activities shall be allowed in the strict protection zone unless they are in contradiction with the primary objectives of the protection of the area.
The entity responsible for the natural heritage management shall provide for constant monitoring for the purpose of maintaining the characteristics of the strict protection zone.
Zone for active management shall be a zone of high interest for the protection, in which some major management interventions are needed for the purpose of restoration, revitalization or rehabilitation of the habitats, ecosystems and other elements of the landscape.
Within the zone for active management, management activities may be carried out regarding:

- Manipulation with habitats; and
- Manipulation with species.

It shall be allowed to carry out economic activities that have no adverse impact on the primary objective of the protection in the zone for active management, such as ecotourism or traditional extensive agriculture.
The successful management of this zone, as well as the further permanent maintenance thereof, may lead to the zone acquiring characteristics of a strict protection zone.
The zone for sustainable use shall be a significant part of the protected area with no high values for protection, with infrastructure facilities, objects of cultural heritage, types of forest plantations that are not characteristic for the area, as well as inhabited places with the surrounding agriculture land. Long-term undertaking of interventions and measures may lead to it acquiring the characteristics of zone for active management.
Buffer zone in principle shall be an area outside the natural heritage and shall have the role to protect the zones mentioned above, with an interest in protection against the threats coming from outside of the natural heritage area.
When economic activities are carried out within the frames of the buffer zone, the measures for protection provided for by this Law shall be applied.
A buffer zone shall also be established within the frames of the protected area between the zones the regime of protection and management of which exclude each other.
This beech forest Dlaboka Reka, that is on the mountain massif Korab, is a part of the national Park Mavrovo in North Macedonia and it is in the zone of strict protection, or it is authentically natural area, with no human interventions at all, as it is prescribed in the Law on Nature Protection.
Natural processes that are almost untouched by man in the last 100 years characterize the site Dlaboka Reka. UNESCO - World Natural Heritage of ancient and primeval beech forests of the Carpathians and other regions of Europe, recognized this site and now we can proudly say that we need to continue with the activities related to protection. Protection is also part of the Forest Management Plan and guarantee strong protection status in the long term. Additionally, an effective management of buffer zones to protect the property from external threats and to safeguard its integrity is of uppermost importance.

3.12 Poland

No current conservation issues have been identified.

3.13 Romania

Cozia

June-July 2018, due to extreme weather phenomena (heavy rain and very strong wind), there were calamities in the area of the UNESCO site, which consisted of windthrow on an area of about 27 ha, out of which 15 ha are located in the property and 12 ha in buffer.
These calamities affect investments in the immediate vicinity of the site: transport routes (forest roads) and torrents dams. But they can also jeopardise the European Road (E81) about 4.5 km from the disaster. For these issues, UNESCO has been asked for a point of view to allow interventions in areas of potential risk for these investments outside the UNESCO site (cfr letter sent by the State Party of Romania on 17 September 2018 to the World Heritage Center)

Grosii Tiblesului

The management plan of the Natura site UNESCO Grosii Tiblesului is under development. Within this plan, specific management activities for UNESCO property Grosii Tiblesului will be established. The most relevant activities are inventory and mapping studies, increasing the institutional capacity of the custodian, equipment for monitoring the conservation status of species and habitats, and a plan to promote the area.

Strimbu Baiut

The management plan of the Natura 2000 “Codrii Seculari de la Strimbu Baiut” site is under development. Within this plan, specific management activities for UNESCO property Strimbu Baiut, will be established. This is subject of a project finance by EU, implemented by Maramures Forest Directorate in partnership with WWF Romania and Strambu Baiut City Hall. The most relevant activities are inventory and mapping studies, increasing the institutional capacity of the custodian, equipment for monitoring the conservation status of species and habitats, and a plan to promote the area.

3.14 Slovakia

No current conservation issues have been identified.

3.15 Slovenia

No current conservation issues have been identified.

3.16 Spain

No current conservation issues have been identified.

3.17 Switzerland

No current conservation issues have been identified.

3.18 Ukraine

No current conservation issues have been identified.

3.19 Extension 2022

Currently two States Parties of the existing World Heritage Property are preparing boundary modifications in three already existing sites: Dürrenstein (Austria), Paklenica 1 and 2 (Croatia).

Austria will submit the boundary modifications in 2022. All of the planned modifications will strengthen the OUV and the Integrity of the single sites as well as the whole property. Especially the enlargement of Dürrenstein will foster ecological processes within the world heritage component parts and its buffer zones. The adaption of the zonation of Paklenica (as already announced in the last SOC reports of the property) and the connection of the two component parts into one component part will ensure the functionality of the buffer zone and the component part and harmonize the zonation with the purpose and functions of the buffer zone of the property. In none of the modifications the size of the property will be decreased.

4. In conformity with Paragraph 172 of the Operation Guidelines, describe any potential major restorations, alterations and/or new construction(s) intended within the property, the buffer zone(s) and/or corridors or other areas, where such developments may affect the Outstanding Universal Value of the property, including authenticity and integrity.

4.1 Albania

No such plans or activities have been identified.

4.2 Austria

No such plans or activities have been identified.

4.3 Belgium

The cluster of Sonian Forest consists of 5 component parts, all of them are strict forest reserves embedded into a forest ecosystem, which is managed under different protected areas categories in the three regions in which the reserves are situated (Brussels, Flanders, Wallonia).

In 2019, **the Sonian Foundation** was established by the three regions to coordinate transregional issues concerning the Sonian forest. On behalf of the State Party Belgium, the Sonian Foundation is also hosting the permanent secretary of the WH series from 2020 until 2024.

Regarding **the Brussels components**, the two component parts with the numbers 9 and 10 (Grippensdelle A & B) are separated by a road. The road is so narrow that the trees can touch their crowns from both sides of the road. Brussels has conducted a feasibility study to construct a green bridge (ecoduct) as an ecological corridor connecting the two component parts, thus creating a single component Grippensdelle of 61 hectare. Eliminating defragmentation by building a green bridge is an explicit objective of the new management plan adopted by the Government on 6/06/2019. the width of the bridge is estimated to be approximately 50 m.

The formal decision to build this green bridge has been taken by the regional government.
The bridge will be constructed by Beliris[7]. All the preparatory studies for the construction of a green bridge have been finalised. A public tender, in order to prepare the construction plans, necessary permits and the monitoring after the construction, will be published shortly.

[7] https://www.beliris.be/

We are waiting for the finalised Beliris project schedule.

Once completed, a minor boundary modification will be proposed for the two component parts.

The figure below indicates the proposed location of the green bridge in red (project d'écopoint de la chaussée de la Hulpe). The green bridges that have already been realised (defragmentation of the ring road in Groenendaal and the railway Line 161) are indicated in green.

Figure 3: Location of the green bridge Sonian fores (Belgium)t

The Walloon part of the Sonian forest, of which about 270 hectare is public state forest, consists of 120 to 200-year-old beech forest stands. Like the other parts of the Sonian Forest in Flanders and Brussels, the Walloon part has been designated as a Natura 2000 site (BE31002 - *Vallées de l'Argentine et de la Lasne*) and as a regional protected landscape.
The actual Walloon components of the property are Ticton A (nord) with a surface of 13.98 hectare and Ticton B (south) with a surface of 8.13 hectare. Both parts were designated as strict forest reserves in the management plan. In order to respond to the WHC Decision 43 COM 7B.13, the Walloon administration (Département de la Nature et des Forêts) examined various hypotheses to extend the existing components to a minimum size of 50 hectare.

In June 2021 a project for the extension of Ticton A and B was sent for approval to the Walloon government. The proposal is to join both parts to have one component part of 98.53 hectare.

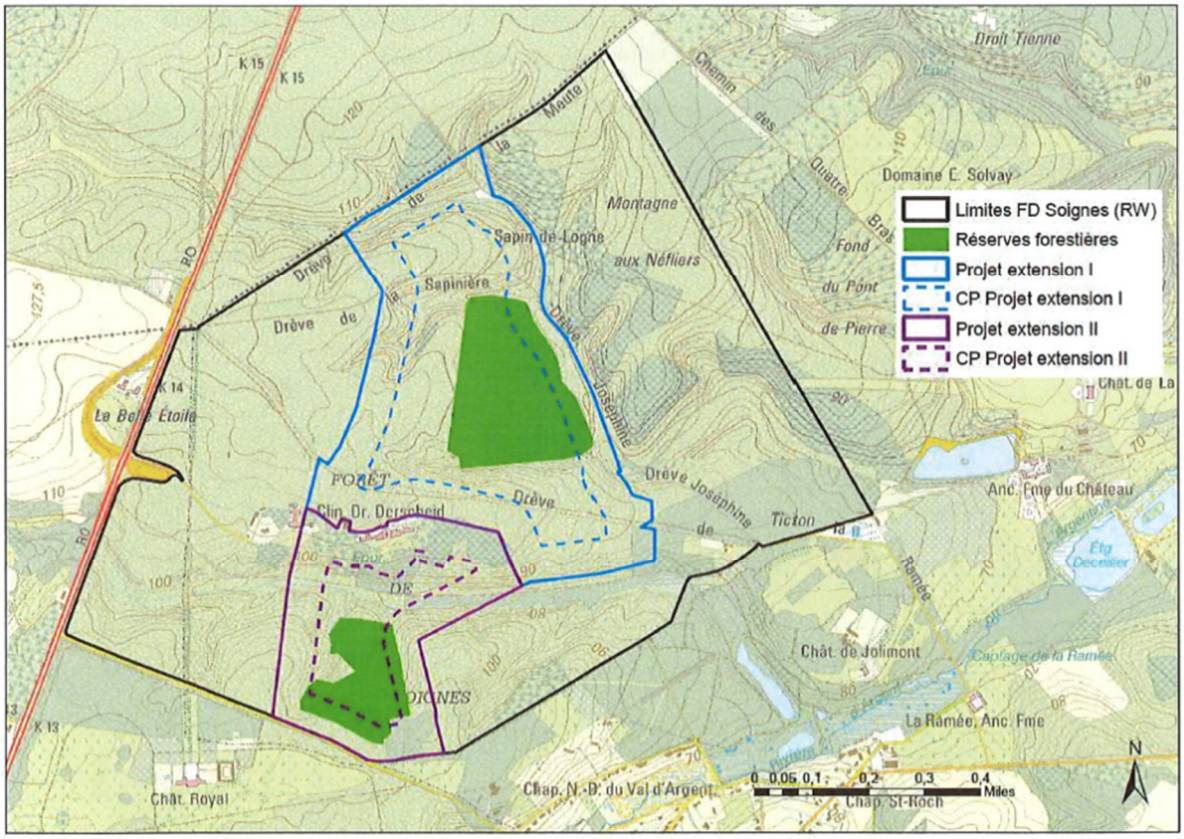

Figure 4: Map of the future extension of the Walloon part of the Sonian forest (Belgium)

The precise configuration of the component, including the protective buffer zone, will be defined in accordance with the guidance documents on buffer zone management.
In order to formalise the extension of Ticton A and B, the Walloon Government must take a decision on the enlargement of the actual forest reserve and the future development plans of the former Derscheid Hospital. Based on this decision, the management plan will have to be adapted. A minor boundary modification will be proposed following the reconfiguration of the Ticton A and B component parts.

The Flemish road administration, “De Werkvennootschap”, is currently working on a plan to remodel the Brussels ring road. The intervention area will be located in the buffer zone of the components of the Sonian Forest. A letter with more detailed information on the project goals, the process of an ESIA as well as the impact on the OUV will be submitted to the WHC in due course.

4.4 Bosnia-Herzegovina

No such plans or activities have been identified.

4.5 Bulgaria

No such plans or activities have been identified.

4.6 Croatia

No such plans or activities have been identified.

4.7 Czechia

In 2021, pursuant to Act No. 144/1992 Gazette on Nature Conservation and Landscape Protection, as amended later, the comprehensive Management Plan for the Jizerskohorské bučiny/Jizera Mountains Beech Forest National Nature Reserve elaborated by the Nature Conservation Agency of the Czech Republic in cooperation with all stakeholders and taking into account all requirements related to a UNESCO World Heritage Site was approved by the Ministry of the Environment of the Czech Republic to be applied by the NNR managing authority in the field.

4.8 France

No such plans or activities have been identified.

4.9 Germany

No such plans or activities have been identified.

4.10 Italy

No such plans or activities have been identified.

4.11 North Macedonia

No such plans or activities have been identified.

4.12 Poland

No such plans or activities have been identified.

4.13 Romania

Domogled- Cerna Valley component

Except the project for the rehabilitation of the national road 66A, that was put on hold until clarification of the steps to be followed, there are no other projects foreseen which may affect the Outstanding Universal Value of the property.
In some parts of the buffer zone (settlements area) there are construction and investment projects only of local communities in the park's sustainable development area (approximately 900 ha). These do not affect the OUV of the property.

Other component parts

No such plans or activities have been identified in the other component parts in Romania.

4.14 Slovakia

No such plans or activities have been identified.

4.15 Slovenia

No such plans or activities have been identified.

4.16 Spain

No such plans or activities have been identified.

4.17 Switzerland

Component "valli di Lodano, Busai e Soladino"

The legal status for the landscape buffer zone of the component has gone through a first positive decision. The cantonal authorities have submitted the new cantonal structure plan (the highest spatial planning document in Switzerland) to the federal authorities. The buffer zone protection has been accepted as proposed, but other parts of the structure plan (not related with the WH property) are still in consultation. The final decision is foreseen in the second half of 2022.
The decision of the Federal Council on the project of the 220 kV "All'Acqua-Vallemaggia-Magadino" power line has not been scheduled yet. However, the cantonal structure plan can be approved only if the decision will be made in line with the recommendation of the experts groups, i-e that the power line will be built underground between Lodano and Cavergno. This solution has been communicated to IUCN during the evaluation and is also cited in the evaluation report.
We are aware that if the decision would not be in line with this solution, our Country will have to inform the Committee before taking a final decision in line with the para 172 of the Operating Guidelines.

Component "Bettlachstock"
The Federal Court has announced its verdict in the Grenchenberg wind farm case at the end of November 2021. Of the six projected wind turbines, two may not be built - to protect a pair of peregrine falcons. It is not yet known whether the developer will continue with the project.

The two cancelled turbines are the two located in the easternmost part (WEA2 and WEA3 in the image), and thus those that would have come closest to the World Heritage Property perimeter:

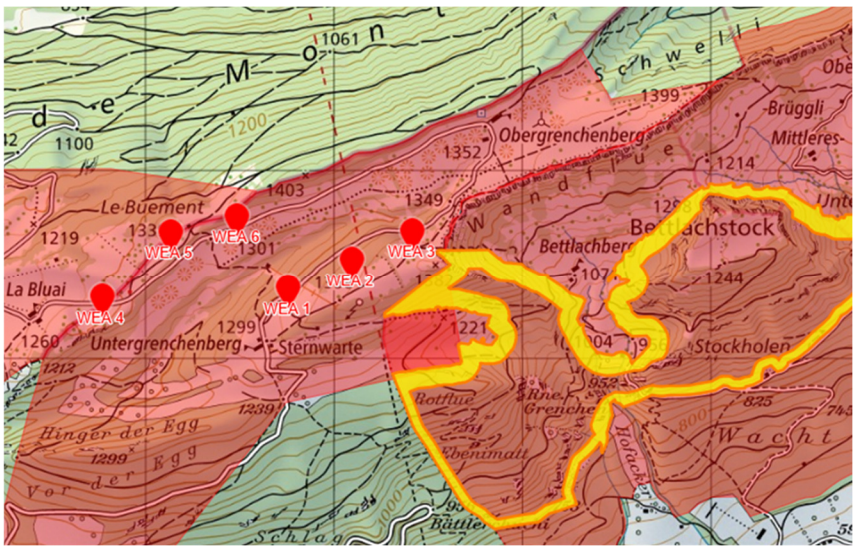

Figure 5 : Position of the turbines. The protective buffer zone is the yellow surface.

The protection of the component "Bettlachstock" is thus enhanced, event if these turbines were not evaluated as having an important impact on the OUV by IUCN.

General Information
The discussions with the aim to enhance the management, monitoring, education and communication actions for the 2 component to reach the standards of a world heritage property are ongoing. Some new financing are already been invested in 2021 through contracts with the Federal Office for environment (160'000 USD). Some actions are financed by the cantons and the local authorities. Other investment are foreseen in the future in line with the 4 years contract between

the Cantons and the confederation for the financing of the activities in the natural world heritage property at national level. The governance will involve the local authorities as well as the cantons.

4.18 Ukraine

In recent years there have been important changes in Ukrainian nature protection legislation, which were primarily aimed at conservation of primeval and old-growth (ancient) forests (Forest Code of Ukraine), as well as improvement of the conditions for conservation of natural complexes in protected areas (Laws of Ukraine "On Nature Reserve Fund of Ukraine", "On environmental impact assessment" and Sanitary rules in the forests of Ukraine).
As a result of these innovations, any industrial logging (felling) (in Ukrainian terminology logging (felling) of the main use), including continuous felling (clear cutting), within all types of protected areas was prohibited. Previously, they were practised in the economic functional zones of national nature parks.

Significantly limited continuous-sanitary loggings used to take place on the territories of biosphere reserves and national nature parks. Presently, they can be carried out only within the economic zones of national nature parks and zones of anthropogenic landscapes of biosphere reserves only in case of accidents and natural disasters (Law of Ukraine "On Nature Reserve Fund of Ukraine", Sanitary Rules in Forests of Ukraine).
At the same time, in order to carry out continuous sanitary felling in protected areas, in accordance with the Law of Ukraine "On Environmental Impact Assessment", it is necessary to conduct an environmental impact assessment, which makes it practically impossible to carry out such felling.
The fact is that environmental impact assessment is not for free and means a very complicated bureaucratic procedure.
Due to this, since the adoption of the corresponding law in 2017, the administrations of Ukrainian protected areas, in particular those where component parts of the Heritage Site are protected, have not carried out any sanitary felling at all in the buffer zones of the components.

The excerpts from the current environmental legislation of Ukraine, which relate to the changes mentioned above can be found in **annex 3** (*7.3 Supplementary information on Forest management operations)*. More specifically in annex 1 of this document.

The Carpathian Biosphere Reserve has an approved management plan, valid until 2029
The new management plan of the Carpathian Biosphere Reserve (CBR), which is valid since 2019, made significant changes in functional zoning of the CBR territory. We managed to include practically the entire territory of WHS into the core zone, where all types of management and activities are forbidden. This made it possible to avoid many problems with the protection of the territory of component parts. Also we managed to include to the buffer zone of CBR, a considerable part of the buffer zone of WHS, which also supports its proper protection

Gorgany Nature Reserve has an approved management plan valid until 2025.
Podilsky Tovtry National Nature Park has an approved management plan valid until 2023.

The rest of the protected areas, namely the **Roztochya Nature Reserve and the Uzhanskyi, Synevyr and Zacharovany Krai National Nature Parks,** do not currently have management plans (the previous ones have expired) and are in the process of developing new ones. This process usually takes up to three years. Therefore, we will try, through our Ministry, to introduce a mandatory requirement to include component parts of the Heritage Site into the core zones (this is not relevant for nature reserves), and to include their buffer zones as much as possible into the zone of regulated recreation,

where protection is quite strict and has many restrictions concerning certain types of nature management, in particular forestry.

5. Public access to the state of conservation report

[Note: this report will be uploaded for public access on the World Heritage Centre's State of conservation Information System (http://whc.unesco.org/en/soc). Should your State Party request that the full report should not be uploaded, only the one-page executive summary provided in point (1) above will be uploaded for public access]

Table 1: Indication of acknowledgement of public access to the report by the States Parties

Country	agree to full public access	refuse public access
Albania	yes	no
Austria	yes	no
Belgium	yes	no
Bosnia-Herzegovina	yes	no
Bulgaria	yes	no
Croatia	yes	no
Czechia	yes	no
France	yes	no
Germany	yes	no
Italy	yes	no
North Macedonia	yes	no
Poland	yes	no
Romania	yes	no
Slovakia	yes	no
Slovenia	yes	no
Spain	yes	no
Switzerland	yes	no
Ukraine	yes	no

6 Signature of the submitting authority

Getekend door:Marleen Evenepoel (Signa
Getekend op:2022-01-26 14:23:47 +01:00
Reden:Ik keur dit document goed

Marleen Evenepoel

Marleen Evenepoel

Administrator General Agency for Nature and Forests Flanders - Belgium

7 Annex

7.1 Glossary of Forest management terms used by the Unesco WHS "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe"

- This Glossary of Forest management terms is a list of definitions in order to create a common language and joint understanding for the management of the property and the buffer zone of the WHS "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe".
- In an attempt to reach this common understanding, several terms are defined using easy to understand and metric parameters, based on international and regional forestry manuals. We are aware that these definitions may diverge from legally binding definitions in the respective States Parties. In no way do the below applied definitions and restrictions replace or abolish official definitions and restrictions included in existing national or regional legislation.
- The definitions will be used in the context of the WHS Beech "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe."

A) Silvicultural system[8]

A silvicultural system	A planned series of treatments for tending, harvesting, and re-establishing a stand. The silvicultural system is applied in the forest stand or forest management unit. The forest stand is a homogeneous unit within the forest that has a certain structure and tree species composition and is managed in the same way, areas can differ from very small (< 1 ha) to very large (up to 50 ha)

Most of the management treatments being used can be assigned to following management options:

1. Even-aged silvicultural system:	A planned sequence of treatments designed to create or maintain a stand with predominantly one age class. The range of tree ages for an even aged forest is generally assumed to be 20 % or less of the rotation age.
2. Uneven-aged silvicultural system:	A planned sequence of treatments designed to create or maintain a stand with three or more age classes. These silvicultural systems include cutting methods designed to obtain regeneration (regeneration cutting methods), and a variety of cultural practices for modifying tree density and otherwise contributing to the development of an immature stand (intermediate cutting methods) but is especially the result of single tree or group selection systems. In the single tree selection (plentering) (natural) regeneration is not an aim but has to be considered because of harvesting a single mature tree.
3. Non-intervention Forest	is characterized by the lack in formal management, e.g. in the preference of natural development of forests for nature conservation purposes. As the lack of formal management measures is a consequence of a management vision it

[8] https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5413732.pdf

	should be viewed as a management regime. In some forests a non-intervention regime is the only management measure applied. Areas in the forest with explicit and deliberate choice of non-intervention can be larger (10-1000 ha, often defined as 'forest reserve') or smaller areas (0.5-10 ha), embedded in a matrix of managed forests (often called 'set-aside islands').

A 1) Even-Aged Management

Even-aged management involves application of regeneration and intermediate cutting methods to create and maintain an even-aged stand. The even-aged regeneration cutting methods are clearcutting, seed-tree cutting, and shelterwood cutting. The even-aged silvicultural system also includes thinning, improvement cutting, release, and other intermediate cutting methods.

Clearcutting system	The harvesting in one operation of (almost) all trees with the expectation that a new, even-aged stand will be established. In the context of this document, we define a minimum surface of 0.5 ha. Intervention areas smaller than that are covered as 'group fellings' or 'femel cutting'. (The size limit of the intervention area is related to the circular area with a diameter between 2 and 3 times the tree height of mature trees*). There are many variants of clearcutting (a common variant is strip clearcutting): nevertheless, independent of form the same rule on the intervention area can be applied. In modern clear-cut areas, some trees may be spared from felling (tree retention, e.g. habitat trees). The remaining canopy cover after clearcutting is below 30 % of the initial cover. * In some countries, lower surface minima are applied; local legal restrictions off course always apply.
Shelterwood cuttings system	The shelterwood regeneration method involves a series of entries designed to improve the vigour and seed production potential of residual trees, and to provide suitable conditions for seedling establishment. To be considered the shelterwood method, the prescription must include an explicit regeneration objective. Generally, the shelterwood cutting method is used to create an even-aged or two-aged stand, the regeneration period is about 20 to 30 years. Theoretically a shelterwood cutting could involve from two to four steps. A four-step shelterwood includes a preparatory cut, a seed cut, first removal and final removal cut. A two-step shelterwood includes a seed cut and a removal or final cut. We distinguish a uniform shelterwood and a group shelterwood. Uniform shelterwood means that the seed cut, and removal cut are applied to the entire stand area. In a group shelterwood system, cuttings are limited to smaller plots. In the context of this WHS we refer to a group shelterwood system whenever the plots or groups are smaller than 0.5 ha. Regulations for group shelterwood

	systems are mentioned together with femel cutting.

A 2) Uneven-Aged Management

Uneven-aged management uses regeneration and intermediate cutting methods to create and maintain an uneven-aged stand. The uneven-aged regeneration methods are individual tree and group selection cutting. Regeneration period is continuous.

Individual Tree Selection or plenter cutting.	This silvicultural system involves removing selected trees from specific size or age classes over an entire stand area. Removing single trees creates small openings so this method favours the regeneration of species that can tolerate shade. Individual tree selection is used to create or maintain an uneven-aged stand, reflecting a predefined (semi-)natural age or size distribution. It involves periodic selective harvests (final harvest and thinnings combined), and no rotation period and continuous regeneration.
Group Selection or femel cutting	This silvicultural method involves final felling of small groups of trees[9]. The resulting openings permit more sunlight to reach the forest floor than with individual tree selection, and some regeneration of shade intolerant species is possible. Planned repeated application of group final fellings result in small groups or clumps dispersed through a stand, with each group containing trees of similar age and size classes. We refer to group selection whenever the intervention area is smaller than 0.5 ha.

Non-native tree species	is a tree species living outside its historical or actual native distributional range, but which has arrived there by human activity, directly or indirectly, and either deliberately or accidentally.

[9] One to two tree heights are the rule (Leibundgut, 1981; Runkle, Brokaw). This results in a canopy gap of max. 0.1 to 0.5 ha)

B) Silviculture terminology

Tending operations in young stands	In even-aged stands, between the period when a tree stand is established and the first commercial harvesting operation, there are a number of tasks that are carried out to allow access to the stand and improve survival rate, tree form, and wood quality of young trees. In Europe we normally distinguish tending and thinning: Tending (pre-commercial thinning): operations to improve the tree shape and spacing and tree species composition, but with no financial revenue, only investment in increased survival of trees (suppression of competing vegetation) and tree shape and quality. Thinning: selective removal of trees, if the felled trees can be sold, we refer to commercial thinning
Cuttings due to extreme events or Salvation harvests:	Salvation harvest is the harvest of trees that were affected by a disturbance event, leading to considerable amounts of dying trees. Trees are removed to recuperate some financial revenue, or for accessibility, or to prevent further spread of pests and diseases (= sanitary cutting).
Phytosanitary cuts (pest control)	Sanitary cutting[10] - extraction of dead, damaged, broken and fallen trees etc. to improve the phytosanitary condition of the forest stand. It is applied in the situation where the stand is affected by biotic factors (pest attacks) and the extraction of the affected trees is not part of the regular management but is necessary in order to prevent further spread of a biotic disturbance agent (e.g. insect or fungal infection) to the remaining forest stand or adjacent unaffected forest stands = a specific situation of 'salvation harvest'.
Artificial regeneration	Active planting of trees, grown in nurseries. Often applied if the natural regeneration is not sufficient or does not include specific target tree species.
Natural regeneration	Regeneration from seed or vegetative parts originating from trees in situ
Assisted natural regeneration	Natural regeneration of forest/other wooded land with deliberate human intervention aimed at enhancing the ability of desired species to regenerate. Works to help natural regeneration establishment and growth (age of the trees: 0 - 5 years, approximately): Examples: Scarification of the soil to create good germination conditions for seeds.

[10] Information Romania

C) Additional measures of integrative management (cfr. Kraus & Krumm, 2013).

Functional network of old-growth elements	This contains conservation and development of old-growth patches (set-aside and extended rotation patches), habitat trees (individual trees or clusters) and large dead wood.
Set-aside patches	Areas that are deliberately delineated to conserve or develop to old-growth stages through non-intervention = biologische Altholzinseln (îlots de sénescence)
Extended rotation patches/ senescence patches	Areas that remain managed but are deliberately delineated to develop old stands by significantly extending the rotation period or excluding final harvest (only selective thinning). (Wirtschaftliche Altholzinseln (îlots de viellissement).
Corridors	Connecting areas between the component parts of the functional network of old-growth elements and other biodiversity hotspots, containing a high concentration of old-growth features.
Habitat tree[11]	Tree containing Tree Related Microhabitats (TReM's - Larrieu et al): they are preferably (or wherever possible) large and old trees (mature or overmature).
Tree related Microhabitat	A distinct, well delineated structure occurring on living or standing dead trees, that constitutes a particular and essential substrate or life site for species or species communities during at least a part of their life cycle to develop, feed, shelter, or breed. TreMs are specific aboveground tree morphological singularities that are not to be found on every tree. TreMs encompass both tree-originating modifications caused by biotic and abiotic impacts, such as intrusions, lesions, and breakages, which expose sap and heartwood and initialize outgrowth structures and wood decay (saproxylic TreM), as well as elements of external origin that are physically linked to the tree (epixylic TreM).

[11] Tree related microhabitats in temperate and Mediterranean European forests: A hierarchical typology for inventory standardization

7.2 Guidance Document: 'Management of the property and buffer zone zonation'

Guidance document

on buffer zone management

and buffer zone zonation

This guidance document aims to harmonise the management approaches in the property and the buffer zone. While the component parts of the property are under strict non-intervention management, the buffer zone management addresses the three functions of the buffer zone: protection, connection, and landscape conservation. The document points out how these functions are understood with regard to beech forest ecosystems. The complexity of the functions leads to the decision to separate two subzones within the buffer zone if needed due to different regimes in larger buffer zones with existing sustainable land use.
Table 1 on page 18 of the guidance document provides target setting on recommended minimum regulations for the property and the buffer (sub)zones.

Version April 13, 2021

Introduction

The 78 component parts of the World Heritage Site "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe" are located in 41 protected areas in 12 European countries and 10 different Beech Forest Regions under various ecological, economic, or legal conditions. This led to different designs of the property and the respective zonation of the buffer zones. In its decisions 41 COM 8B.7 and 43 COM 7b.13, the World Heritage Committee addressed this issue with a specific focus on the buffer zone management:

Decision 41 COM 8B.7 (8.): 'Further requests that special emphasis shall be given to appropriate buffer zone management in order to support undisturbed natural processes with special emphasis on dead and decaying wood, including ongoing monitoring of threats and risks, making effective use of the expertise and institutional capacity in management of the property;'

After a phase of reviewing scientific papers and expert meetings, this document was developed to come up with a proposed standardised management approach in the property, as well as the buffer zones.
The zonation process should reflect the ecological situation (location of primeval and/or ancient beech forest without forest management), the responsibility of the management organisation in place (national park, strict forest reserve,…), local and regional stakeholders (landowners, local communities, responsible authorities, and ministries, …) and legal implications of the respective protection status (status of strict protection has to be guaranteed by law or equivalent regulations).
As the property is located in 41 different protected areas within 12 different countries, the land ownership, spatial design, legal protection status, and management regulation of the buffer zones were and are very diverse. To ensure the functionality of the buffer zone for each component part of the property and to harmonise the management approach, a process to develop a joint guidance document was started. The following activities have been met:

2018 (May-Aug.)	Literature search on threats and functionality of buffer zones (coordination office)
2018 (Aug-Sept.)	Online questionnaire on rating of threats for all component parts (clusters) by all States Parties
2018 (Aug.-Oct.)	Development of a draft guidance document on buffer zone design and management (coordination Office)
2018 (Nov.)	Evaluation and feedback from States Parties on the draft guidance document.
2018 (Dec.)	Submission of the approved draft version of the guidance document in the States Parties Report on 1st of Dec. 2018 to UNESCO.
2019 (March)	Technical workshop on the guidance document in Sibiu (RO) (States Parties & coordination Office).
2019 (May)	Presentation of the draft regulations for buffer zones to IUCN experts in Bern in the course of the preparation of the next extension.
2019 (May)	Discussion of the current draft version of the guidance document at the Joint Committee Meeting (JMC) in Suceava (RO) (States Parties & coordination

	office). Another technical workshop was planned, and the final decision was postponed to the JMC-meeting in April 2020.
2019 (June-Sep.)	Online questionnaire on the current rules and regulations within all component parts (States Parties).
2019 (Oct.)	International technical workshop on buffer zone management for the beech forest WH (experts from States Parties, IUCN, coordination office).
2019 (Nov.-Dec.)	Update of the guidance document according to the workshop outcomes.
2020 (Jan.)	Submission of the updated draft guidance document for feedback to the States Parties. Inclusion of the draft document into the States Parties Report (submitted by 1st of Feb. 2020).
2020 (April)	Discussion of the current draft version of the guidance document at the Joint Committee Meeting (JMC) (online) (States Parties & coordination office).
2020 (Aug.)	Bilateral meetings with all States Parties to create a shortlist of the topics that still need further discussion among States Parties.
2020 (Oct.)	During the JMC-meeting of October 2020 the guidance document of the buffer zone management and buffer zone zonation was discussed. A shortlist of the topics that still need further discussion among States Parties was presented. The JMC decided to create 2 working groups to prepare possible solutions for these open-ended topics. (online) (States Parties & coordination office).
2020 (Nov.)	A workshop was organised with technical experts to prepare “the status of the document” and “the construction of new infrastructure and the maintenance of existing infrastructure”.
2020 (Dec.)	A workshop was organised with technical experts with the aim to create a Glossary of Forest management terms to create a common language and joint understanding for the management of the property and the buffer zone of the WHS “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”.
2021 (Feb.)	A workshop was organised with technical experts to prepare content related to forest management. For most topics, a consensus was reached during the workshop. There is still a very limited number of topics that need a bit of clarification.
2021 (Feb.)	Bilateral meetings with Slovakia, Romania and some experts to clarify the final open topics on forest management
2021 (March)	Update of the guidance document according to the workshop outcomes. Submission of the updated draft guidance document for feedback to the States Parties.
2021 (March)	Pre-JMC-meeting with all JMC-members to present the outcome of the workshops and to discuss the revised version of the guidance document.
2021 (April tbc)	Decision on the new updated version of the guidance document between all 12 States Parties at the JMC-meeting.

In the States Parties Report from December 2018, a draft version of the guidance document was included. The decision of the WHC 43 COM 7B.13 was based on the recommendation of IUCN:

Decision 43 COM 7B.13

6. Notes with appreciation the willingness of the States Parties to develop joint guidelines for buffer zone design and management and the progress achieved to date, but expresses concern that no progress has been made on clear guidelines regarding acceptable logging activities within the

*established buffer zones and reiterates the importance of good buffer zone design and effectiveness as the only feasible way to protect the integrity of the small forest remnants included in this property; 7. Considering that Decision **41 COM 8B.7** requested all States Parties of this property to give special emphasis to appropriate buffer zone management in order to support undisturbed natural processes, [the World Heritage Committee] urges the States Parties to define a clear and strict approach to buffer zone design and management which will allow for the protection of the Outstanding Universal Value (OUV) of the property and to seek further guidance from the World Heritage Centre and IUCN on this issue;*

There was no negative feedback on the subzoning approach from IUCN in the SOC-Report 2019, but the report recalls "that various IUCN evaluations of this property have stressed the importance of good buffer zone design as the only feasible way to protect the integrity of the small forest remnants included in this property".
The draft guidance document developed in 2018, which was presented and discussed with IUCN experts in Bern in May 2019, was also used as the basis for the preparation process for the proposed extension process 2020 (States Parties and component parts according to the submission of tentative submission formats in Feb. 2019).
This current version of the guidance document includes the results of the above listed meeting´s, discussion, and reviews of States Parties. It is including IUCN expertise from the workshop on the extension process in Bern May 2019 and the technical workshop in October 2019 in Vienna.
Since the discussion evolved after the submission of the extension nomination dossier in February 2020, this document differs slightly from the proposal included in the extension nomination dossier of February 2020. Further synchronisation will be sought once the guidance document is agreed upon by the JMC and the extension is approved.
This guidance document is addressed to the States Parties and responsible management authorities of the inscribed WH Property and is proposed to be approved by the Joint Management Committee (JMC).
As States Parties were using different definitions for identical forest management terminology, this created some confusion. During a workshop on December 9th, 2020, a Glossary of Forest management terms was prepared (cf. annex). This Glossary of Forest management terms is a list of definitions in order to create a common language and joint understanding for the management of the property and the buffer zone of the WHS "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe". In an attempt to reach this common understanding, several terms are defined using easy-to-understand and metric parameters, based on international and regional forestry manuals. These definitions may diverge from legally binding definitions in the respective States Parties. In no way do the below applied definitions and restrictions replace or abolish official definitions and restrictions included in existing national or regional legislation. The definitions will be used in the context of the WHS "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe."

Property

The components parts of the World Heritage contain those ancient and/or primeval beech forests that have a significant contribution to the Outstanding Universal Value of the whole property. The minimum size of each separate polygon aims to be larger than 50 ha (Decision 41 COM 8B.7 (8.)) and has to be under a strict protection regime. The protection status could be a strict forest reserve, core

zone of a biosphere reserve or national park or another PA categories equivalent to IUCN Category I or II. As 'non-intervention' management has no standard definition,

Table 2 on page 18 gives an overview of the recommended (target) regulations and limitations for human activities in the component parts.
Only the very best examples of ancient and/or primeval beech forests within a Beech Forest Region (BFR) have been selected. In some cases, within one protected area only a single World Heritage component part (one polygon) is located. But in those cases, where the ancient/primeval beech forest is fragmented, it was necessary to split up the property into several separated polygons that form a component cluster.

Buffer zones

The Operational Guidelines for the Implementation of the World Heritage Convention of the UNESCO deal with buffer zones as follows:

- 103. Wherever necessary for the proper protection of the property, an adequate buffer zone should be provided.
- 104. For the purposes of effective protection of the nominated property, a buffer zone is an area surrounding the nominated property, which has complementary legal and/or customary restrictions placed on its use and development to give an added layer of protection to the property. This should include the immediate setting of the nominated property, important views and other areas or attributes that are functionally important as a support to the property and its protection. The area constituting the buffer zone should be determined in each case through appropriate mechanisms. Details on the size, characteristics, and authorized uses of a buffer zone, as well as a map indicating the precise boundaries of the property and its buffer zone, should be provided in the nomination.
- 105. A clear explanation of how the buffer zone protects the property should also be provided.
- 106. Where no buffer zone is proposed, the nomination should include a statement as to why a buffer zone is not required.

The buffer zone is addressed to protect the OUV of the property and is not part of the property and neither a contribution to the integrity of the property or to the OUV. This was clearly stated by the IUCN Advisory Body when the design of component parts clusters connected by buffer zones and the minimum size of component parts was discussed within the extension 2016/2017.
UNESCO has published in 2009 a World Heritage Paper 25 on World Heritage and Buffer Zones (MARTIN & PIATTI (Ed.) 2009). This document includes an IUCN Position Paper (p 51-57). In this important document, IUCN considers that the following functions are required within an effective buffer zone:

1. The effective management of a buffer zone aims to maximize the protection of the values of the protected area (including the Outstanding Universal Value of a World Heritage property) and their resilience to change.
2. To maximize the connectivity of the World Heritage property/protected area with other natural lands in a landscape as a basis for responding to climate change caused biome shifts of fauna, flora and habitats – and to maximize landscape connectivity; habitat connectivity, ecological connectivity, and evolutionary process connectivity (WORBOYS et al. 2008).
3. To integrate the World Heritage property/protected area within landscape scale conservation with community initiatives for sustainable use practices including catchment protection, the conservation of healthy environments and the realization of sustainable livelihoods.

To guarantee the functionality of the buffer zone, the entire buffer zone has to be located on land that is under direct or indirect control of the management authority in charge of the component part(s) or under direct control of the State Party (e.g. state-owned forest areas). In the case that a strictly protected forest reserve is directly bordering on a private forest without legal regulation, the buffer zone needs to be located inside the strict reserve to guarantee full control of the buffer zone management. In order to avoid a reduction of the size of the component part, the better option is to find a long lasting and binding agreement with the owner of neighbouring forest stands about an adequate management.
Not all of the three functions mentioned above have to be realised in the buffer zones of each component part. Only the protective function of the buffer zone is obligatory and has to be implemented for all component parts.
To provide the different functions, the buffer zone might need different management approaches. To avoid confusion and to be clear which management regulation has to be applied to which part of the buffer zone, it might be necessary to spatially separate two different subzones in one buffer zones with regard to these management approaches (see detailed description below):

1. Part of the buffer zone with protective function from short distance threats (protection buffer subzone or p-buffer)
2. Part of the buffer zone with landscape conservation and connectivity function (landscape conservation buffer subzone or l-buffer)

As mentioned, the overall aim of the document is to harmonise buffer zone management in order to guarantee the conservation of the OUV and to improve the landscape context and ecological connectivity for the component parts. This can be achieved through different management options in the buffer zone: for some component parts, States Parties decided to apply a non-intervention in the buffer zone (6 States Parties). For other components, a specific sustainable management regime is permitted-that allows for certain commercial harvests, but within specific limitations to meet the overall goal of ecological connectivity (habitat features, structure, microclimate) of the buffer zone. Only for the latter, the subzoning into two different subzones makes sense.
In the nomination process States Parties have delignated-buffer zones of very different sizes and different property versus buffer zone ratios. The table in attachment illustrates these differences (cf. annex).

It is important to understand that there is only ONE buffer zone according to the UNESCO operational guidelines and in the understanding of this guidance document. The subzoning is only necessary for these buffer zones where different management regimes are applied. Component parts or clusters with a buffer zone of sufficient size and-an adequate regulation regime according to the regulations of the protection buffer subzone shown in Table 1 on page 18 (e.g. core areas of National Parks according to IUCN PA Category II) do not need to establish an additional landscape conservation subzone.

While the protection buffer subzone serves mainly the protective function, the landscape conservation buffer subzone serves both the connectivity function as well as the landscape conservation and sustainable use function. As different management approaches need to be applied, these functional buffer subzones may need individual zonation and clear delineation in the field, so that rangers, site managers and land users can realise the borders of each subzone in the field.
An analysis of threats (see State Party Report on the State of Conservation 2018, chapter 3.3.1 Monitoring of threats) shows that not all of them can be avoided or reduced by buffer zones. Climate change or negative impact through human-made emissions are beyond the protective function of

buffer zones. However, buffer zones and adequate management of these buffer zones can mitigate negative impacts caused by human land use practice in adjacent areas. Therefore, the buffer zone should be as large as possible and should have an adequate protective management.

Sustainable livelihood and buffer zones
In line with the mentioned UNESCO World Heritage Paper 25 on World Heritage and Buffer Zones (MARTIN & PIATTI (Ed.) 2009) the guidance document supports community initiatives for sustainable use practices and the realisation of sustainable livelihoods. Since some properties have huge buffer zones including settlements, table 1 indicates how the realisation of sustainable livelihoods is dealt with in the buffer zone.

Protection buffer subzone

The protection buffer subzone has a rather strict protection regime and is located directly around the component part. The protective function of this subzone is closely related to the threats that have local origins and short distance effects.
If the component parts are located close to agricultural land, a buffer zone can protect them from the impact of pesticides or fertilisers. In cases where the property is bordering on economically managed forests, the most likely negative impacts on the property are caused by forestry, leading to a significant reduction of the canopy of adjacent forest stands. Clear-cuts and shelterwood cutting may cause these reductions of the canopy, which have impact on the microclimatic regime in a forest stand. The opening of the canopy of adjacent stands leads to a change in light regime, microclimate, and wind exposure. This might have direct negative impacts on trees on the property by sunburn, windthrows or unnatural changes in regeneration, as well as in the herb layer.

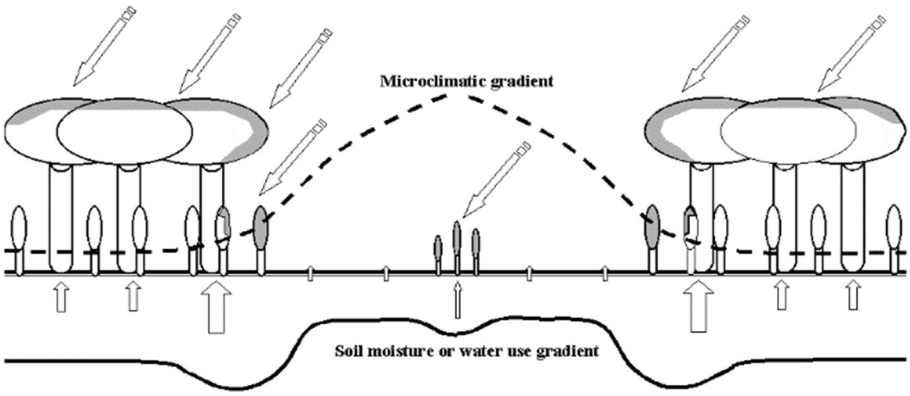

Figure 1: Opening the canopy has effects on microclimate and soil moisture (source: R. Sluiter & N. Smit 2001).

This microclimatic impact is well documented by several studies: MATLACK (1993) described microclimatic effects up to 50 m from the forest edge. JEMALI et al. (2017) documented the impact on temperature up to 50 m and humidity 40-60 m. SCHMIDT et al. 2017 expected altered conditions in soils of transition zones from the forest edge to be 10–20 m with a maximum of 50 m, and 25–50 m for aboveground space with a maximum of 125 m. DAVIES-COLLEY et al. (2000) have observed changes in temperature up to 50 m inside the forest stand. GEHLAHUSEN et al. (2000) documented edge effects on microclimate 40-80 m into the forest stand and observed invasion of exotic species up to 25 m into the forest. These studies give important information on the minimum distance between the property and human-made canopy openings.

SPITTLEHOUSE et al. (2004) demonstrated that openings of less than one tree height in diameter have no significant impact on the microclimate of the surrounding forest stands.

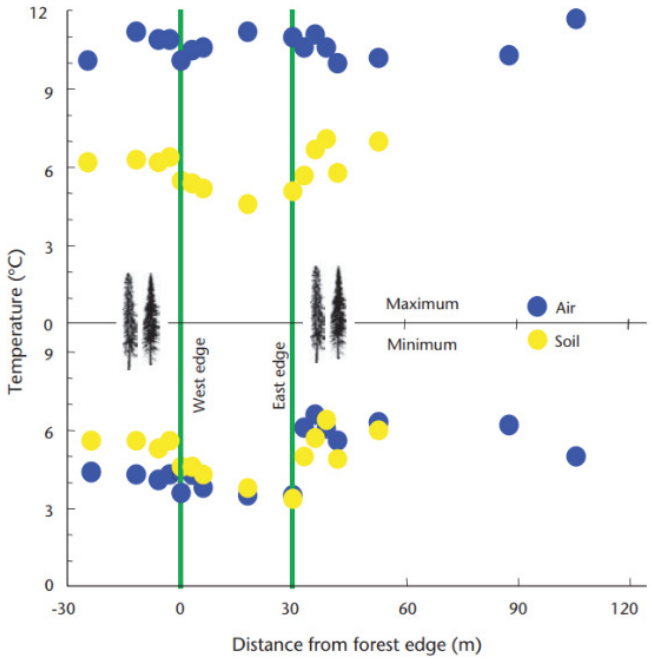

Figure 2: Small Forest gaps do not show severe impact on stand climate in neighbouring stands (source Spittelhouse et al. 2004)

This provides important information on the maximum size of human-made gaps in buffer zones near the property to avoid negative microclimatic effects.
Based on these scientific studies, recommendations on the management of the protection buffer subzone were developed.

Figure 3: Clear-cuts closer to the property than 50-80 m can have effects on the microclimate of the property.

To protect the beech forest in the component parts from these negative, man-made influences by forest management, generally a buffer zone with protective function with a minimum width of 100 m was or will be established beside economically managed forests and agricultural lands. To protect the forest from other threats, larger buffer zones have been or will be established depending on the requirements.
The management in the protection buffer subzone is limited to very small-scaled interventions. Single trees might be removed for phytosanitary purposes to protect the property from invasions of foreign pests. These activities are allowed only with special permission and in restricted areas. Gaps created by human management activities must not exceed the size of the height of a tree in diameter. Human activities must not bring the crown cover below the minimum of 80 % compared to the natural tree cover.

Unless no subzoning takes place because of the choice for a non-intervention regime, a protection buffer subzone is obligatory for each component part. When a river/lake or a steep mountain ridge form the border and there is no evidence of potential negative impacts across the river, protection buffer subzones might not need to be established.
The geomorphology must be taken into consideration in the design of the protective buffer subzone. Disturbances have a wider reach in the downhill direction of a slope (release of nutrients, human-induced avalanches caused by removing forest stands etc.). Therefore, the protective buffer subzone on the uphill side of the property should be wider than on the downhill side.

Landscape conservation buffer subzone

While the protection buffer subzone is designed to protect from direct local threats like microclimatic impacts, pesticides, or fertilisers, the landscape conservation buffer subzone is addressed to protect the forest landscape of the surrounding area, as an important buffer of the meso-climatic situation and to provide good connectivity between component parts included in the same buffer zone, as well as to the surrounding ecosystems.

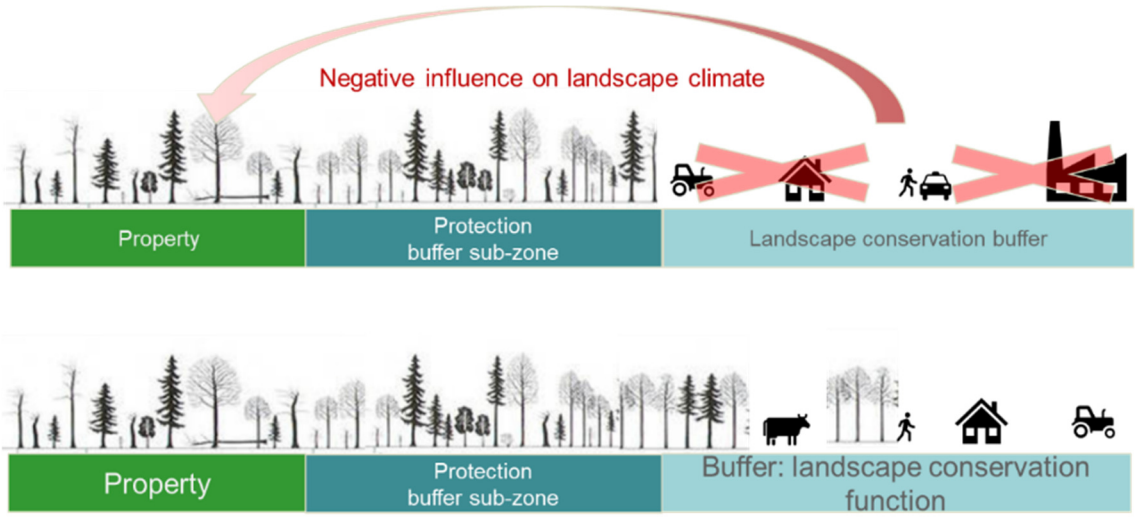

Figure 4: The Landscape conservation buffer subzone should protect the wider landscape from negative developments.

Details on the regulations of land use are found in Table 1.
It is recommended to integrate this subzone into the legal framework of spatial planning on national and local level.
It is not obligatory for a component part to have a landscape conservation buffer subzone.

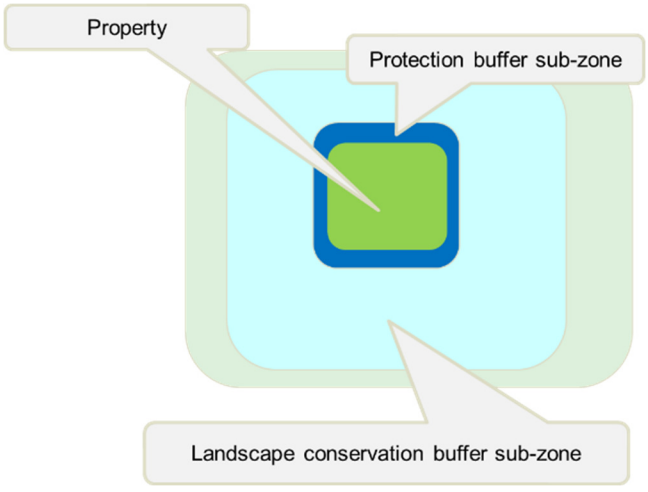

Figure 5: Schematic design of a world heritage component part with two buffer subzones

Landscape conservation function

The more forest cover that can be found in the surroundings of the component parts and the higher the biomass of these forests is, the higher the buffer capacity will be against climatic changes inside the forest and at landscape level. The management needs to ensure that the micro- and meso-climate in the forests of the component parts are not disturbed by human activities outside the component part.
To enhance this meso-climatic buffer function, it is important to protect the adjacent landscapes from negative developments. This includes:

- Increase protected areas and protection status
- Conserve or decrease the extent of settlements, industrial zones, tourism, and traffic infrastructure
- Conserve or decrease the extent of extraction of minerals or infrastructure of the energy sector (wind farms, dams, power lines, pipelines etc.)
- Decrease the intensive industrial agricultural land use and replace it by organic agriculture
- Replace possible intensive forest management[12] by close to nature, extensive forest management (e.g. selective logging) or new forest reserves

Connective function

In many cases the buffer zone covers the entire protected area in which the component parts are located. It connects the undisturbed beech forest stands with other forests or natural ecosystems within the protected area. To ensure connectivity between component parts within the cluster, the connective function of the buffer zone is of high importance. In the case of a continuous natural forest, under non-intervention management of the entire cluster, the connectivity is realised by itself.
Whenever a landscape conservation buffer subzone is relevant, the connective functions require specific management regulations in order to establish a consistent and functional ecological network. The network focuses on conserving and fostering late-successional structural elements and late forest development phases (terminal phase, disintegration phase) in order to provide connectivity and continuity of such natural forest elements. The functional network thus consists of set-aside and senescent patches, habitat trees and a higher amount of dead wood (coarse woody debris). The old-growth patches are functioning as steppingstones for the old-growth forest habitat species, while coarse woody debris and habitat trees guarantee a minimal ecological matrix connecting the forest reserves (component parts) and the old-growth patches. This conceptual model is shown in the scheme of Lachat & Bütler (2007) further on (blue = components, green = set-aside patches, red = habitat trees)

[12] The term „intensive forest management “is used for age-class structured forest management with clear-cut or shelterwood harvesting units larger than 0.5 ha or creating gaps larger than 2x heights of trees. The distance between gaps must be at least 2x the height of trees to be regarded as separate gaps.

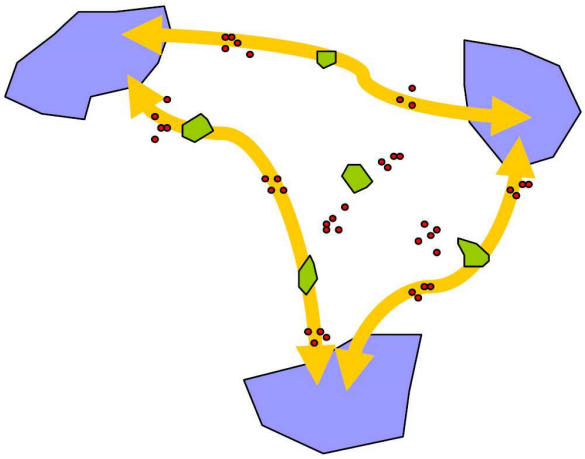

Figure 6: Schematic representation of a functional network of old-growth elements: larger set-asides are interconnected through set-aside patches and individual habitat trees. Source: Lachat and Bütler 2007

To enhance the connective function in the landscape conservation buffer subzone, the forest habitats shall be managed as to preserve and promote the natural structure and tree composition of forest ecosystems specific to the local site conditions. The management should strive to preserve and increase a quantity of dead wood, preserve or develop uneven-aged stands, maintaining natural gap structure or disturbance dynamic, as well as natural regeneration of all tree species of the potential natural forest type. In the case of managed forests, the average biomass (living and dead) should be increased to approach natural biomass levels.

Management regulations

In Table 1 an overview of the proposed regulations for the property (component part) and the two subzones of buffer zone are given. The regulations are seen as target setting for a minimum requirement and the national regulations can be more restrictive based on the national policy or regulations. In many cases the protection buffer subzone is part of the strict forest reserve and has the same strict protection status as the component part(s) – it is imperative that these strict regimes are not downgraded to less strict protection regimes. It is also noted that not all component parts might need a landscape conservation protection subzone.

The process to establish the spatial division into subzones (if needed) and the adaptation of the rules and regulations from the existing legal framework and management plan towards the new target settings given in the following table is a long-term process which needs intensive involvement of stakeholders and site managers. This only applies to component parts for which States Parties need to adjust the management planning.

After the approval of this guidance document, we assume a period of 5 years to map the spatial boundaries of the subzones for those component parts for which States Parties need to adjust the management planning. Considering the longer time frames needed for renewal of the management plans, a time period of 10 is allowed to integrate the management targets into the management plan. In a few cases the traditional land use practices (e.g., shelterwood cuttings) must be shifted step by step into new selective logging schemata, which might take longer, and which should be implemented within 2-3 decades.

All the deadlines will start once the document has been agreed upon by the World Heritage Committee

The implication of this is, that if a State Party needs 5 years to map the boundaries of the buffer subzones, this will reduce the time available to change the management plans. Of course, the individual State Party can decide to speed up the process of the mapping of the boundaries of the subzones to gain some time to adapt the management plans.
With regard to forest management practises related to the cutting of trees, preference should always be given to less intrusive management systems (e.g. selective cutting).
In the following table, the proposed regulation for each land use and each (sub)zone is classified. In most cases the regulation is either 'not allowed' or 'possible'. In some cases, there are additional specifications, such as 'with special permission' or 'on restricted areas.
The specification 'with special permission' allows a land use in the given (sub)zone only with a permission from a nature conservation authority. This permission can be explicit for each intervention or might be regulated in a management plan.
An official forest management plan (MP) is only valid if it was endorsed/approved by a nature conservation authority.
In the case no approved MP is available yet (e.g. if the MP is under revision), intervention in protection buffer subzones and landscape conservation buffer subzones is only allowed in restricted areas and with special permission, issued by the qualified authority, and endorsed/approved by a nature conservation authority**.**
For some permissions, also other responsible authorities might have to be integrated in the approval process.
The specification 'only on restricted areas' allows a land use only on specified sections of the zone. These areas need to be delineated in a map and can be part of a management plan document.
Additionally, an Environmental and Social Impact Assessment (ESIA)[13] might be required to identify, evaluate, avoid, and mitigate environmental and social impacts of development proposals near to World Heritage Sites. This is definitely needed for infrastructure development in the buffer zone (but also outside the buffer zone if a potential impact on the OUV cannot be excluded). If the ESIA was positive (no negative impact on the OUV is to be expected) the proposed project (e.g. infrastructure development) might be implemented. In the case of a positive ESIA, a "not allowed" might be overruled.

13 https://www.iucn.org/sites/dev/files/import/downloads/iucn_advice_note_environmental_assessment_18_11_13_iucn_template.pdf

Table 2: Target settings for minimum management regulations for different (sub)zones.

Land use	Property (WH component part)	Protection buffer subzone	Landscape conservation buffer subzone
AGRICULTURE			
Maintenance of existing agricultural land present at the time of inscription	Not allowed	Not allowed	Possible
Land use change from forest to agriculture land (arable fields, meadows, pastures and cattle grazing)	Not allowed	Not allowed	Not allowed
In the property and protection buffer subzone: existing agricultural land should be phased out in 2 to 3 decades. Exception is possible in the case of implementation of NATURA 2000 goals within a NATURA 2000 management plan. "If grazing takes place and in order to prevent the forest from grazing the application of adequate methods is necessary (e. g. use of sheepdogs, fencing, etc.) in the property and in the protective buffer subzone." In Landscape conservation subzone: an exception on land use change is possible in the case of the implementation of NATURA 2000 goals. All agricultural land use (if existing) should not harm the OUV of the property and agricultural land should be managed according to the principles of high nature value farming.			
FORESTRY			
Tending operations in young stands	Not allowed	Not allowed	Only allowed within the legally approved Management Plan (MP).
Exception for the protection buffer subzone: with special permission it is possible in restricted areas for 2 – 3 decades to restore natural vegetation types or to create stable forest stands that were planted before time of inscription. If non-native tree species occur, they should be reduced through tending operations.			
Phytosanitary cuts (pest control)	Not allowed	Only allowed for conifer tree species within the legally approved Management Plan (MP) or with special permission.	Only allowed with special permission or within the legally approved Management Plan (MP).
Gaps created by human management activities must not exceed the size of the height of a tree in diameter. Human activities must not bring the crown cover below the minimum of 80 % compared to the natural tree cover.			
Cuttings due to extreme events or Salvation harvest	Not allowed	Not allowed	Only allowed within the legally approved Management Plan (MP) **or** with special permission. Remaining dead wood volumes should be at least 30 m3/ha in average
Only windthrown and damaged trees are considered for salvation harvest.			
Clear-cuts	Not allowed	Not allowed	Not allowed
If the landscape conservation buffer subzone is > 5 times the area of the property an exception for landscape conservation buffer subzone is exceptionally possible, only in accordance with the management plans approved for Natura 2000, namely restoration towards natural habitats of non-native forest stands or maintenance of light-demanding native species such as *Pinus sylvestris*. The surface area where that silvicultural system may be applied annually will never be bigger than 1% of the total buffer area at the time. This management practice can be applied in maximum 10 % of the landscape conservation buffer subzone and should be described in an approved MP.			
Shelterwood cutting	Not allowed	Not allowed	Not allowed

Land use	Property (WH component part)	Protection buffer subzone	Landscape conservation buffer subzone
If the landscape conservation buffer subzone is > 5 times the area of the property an exception for landscape conservation buffer subzone is exceptionally possible only in accordance with the approved management plans for Natura 2000. The surface area where that silvicultural system may be applied annually will never be bigger than 1% of the total buffer area. The remaining trees after the final intervention should be at least 8 to 10 trees per hectare. Special conservation measures should be evaluated periodically to assure conservation of the beech ecosystem.			
Group selection or femel cutting	Not allowed	Not allowed	Allowed within the legally approved Management Plan (MP)
If non-native tree species occur, they should be reduced through group selection. The total amount of harvested volume, for all exploitation measures including firewood for local communities, in 10 years is < 10% of standing trees volume at a scale of a forest unit of 50 to 150 hectares.			
Individual tree selection or plenter cutting.	Not allowed	Not allowed	Allowed within the legally approved Management Plan (MP)
Artificial regeneration	Not allowed	Not allowed	Allowed within the legally approved Management Plan (MP) with genetic material from same or adjacent beech forest region.
If natural regeneration is not possible because of the negative consequences of climate change/game browsing and/or grazing these negative impacts have to be solved (as a negative impact of game/livestock on the property is very likely). Artificial regeneration will be used only in cases where, despite efforts, natural regeneration could not be achieved. Seedlings from tree nursery risk to bring pests into the protection buffer subzone.			
Assisted natural regeneration	Not allowed	Not allowed	Allowed within the legally approved Management Plan (MP) from same or adjacent beech forest region.
Old-growth patches (set-aside and extended rotation patches)	Non-interventions zone	Non-intervention zone	If surface of the buffer zone < 5x surface of the property = 10 % old-growth patches If the surface of the buffer zone > 5x surface of the property = 3 % old-growth patches
Old-growth patches are equally divided between set-aside patches and senescence patches. The surface and configuration in the area is based on the forest characteristics. Old-growth patches cover individually 0.5 to 5 ha. Set-aside patches have a non-intervention management, while senescence patches have a temporary period of non-intervention of a rotation of minimal 20 years in order to create more biomass and older trees.			
Dead wood volumes	Non-intervention zone	Non-intervention zone	Average dead wood volumes of > = 30 m3/ha or 10 % of the standing volume of the growing

Land use	Property (WH component part)	Protection buffer subzone	Landscape conservation buffer subzone
			stock excluding old-growth patches
Dead wood is defined as coarse woody debris with DBH (Diameter at breast height) at least 15 cm diameter. The dead wood fraction should cover both standing and lying dead wood in all decay stages and species composition in line with the growing stock. In general, large dead trees present are to be left unharvested in the forest. Young stands do not have a dead wood volume target. The pace required to reach the dead wood target depends on the biogeographical conditions, development stage of the forest stand and the tree species composition in landscape conservation buffer subzone.			
Habitat trees	Non-intervention zone	Non-intervention zone	Minimal **5** habitat trees/ha
Habitat trees should be spared during forest interventions, also in young stands habitat trees might occur.			
Collecting mushrooms, berries, medical herbs (only for personal use)	Not allowed	Not allowed	Possible
The long-term target is to avoid collection of mushrooms, berries, medical herbs in the property and protection buffer subzone. Exception is allowed for the collection by owners for personal use only and if it is allowed by the legislation of the State Party. Commercial use is not allowed.			
Security management along hiking trails	Possible with special permission, wood remains on site	Possible with special permission, wood remains on site	Allowed according to national legislation
Trees that are obviously endangering passengers of hiking/riding/biking trails can be cut for safety reasons. Trees crossing the path can be cut and put aside.			
HUNTING AND FISHING			
Game management controlled by protected area management (to safeguard OUV)	Possible, but reduced to non or minimum intervention	Possible	Possible
Main activities for regulation of game (if needed) should be applied in the landscape conservation buffer subzone. Monitoring of game impact is strongly recommended. Game management should only be applied if game density is increased by anthropogenic factors like feeding, nearby agricultural areas etc. or because of the presence of invasive alien species.			
HUNTING AND FISHING			
Fishing	not of significant relevance to the OUV		
MANAGEMENT OF INVASIVE SPECIES AND PESTS			
Active management (e.g., removal) of invasive species and human introduced pests to protect the OUV and integrity of the property	Only with special permission and in restricted areas	Only with special permission and in restricted areas	Possible
CONSTRUCTION OF **NEW** INFRASTRUCTURE			
Local supply of electricity (< 20KV) and water, landlines,	Not allowed	Not allowed	Allowed with positive ESIA and special permission
Large infrastructure (power lines > 20KV, cellular phone towers)	Not allowed	Not allowed	Allowed with positive ESIA and special permission
Forest huts, shelters	Not allowed	Not allowed	Allowed with positive ESIA and special permission
Visitor/information centre	Not allowed	Not allowed,	Allowed with positive ESIA and special permission
Trails (hiking, riding, biking, Nordic skiing)	Not allowed (only with special	Only with special permission if	Only with special permission

Land use	Property (WH component part)	Protection buffer subzone	Landscape conservation buffer subzone
	permission if integrity of the site can be improved by redesign of trails)	integrity of the site can be improved by redesign of trails and in restricted areas	
Border control infrastructure	Only with special permission (only in few cases relevant)	Only with special permission (only in few cases relevant)	Only with special permission and in restricted areas
Hunting infrastructure	Not allowed	Not allowed	Possible
Hotels, motels, guest houses, restaurants	Not allowed	Not allowed	Allowed with positive ESIA and special permission
The amount of area used by hard touristic infrastructure should not increase significantly compared to the state at the time of inscription (e.g. not more than 10 %)			
Industrial buildings	Not allowed	Not allowed	Allowed with positive ESIA and special permission
The amount of area used by industrial infrastructure should not increase significantly compared to the state at the time of inscription (e.g. not more than 10 %). Industrial buildings should be located in the landscape conservation buffer subzone. Only small-scale artisanal industry with a direct connection to the forest is accepted (e.g. small-scale processing of fruits, vegetables, mushrooms…)			
Forest roads	Not allowed	Not allowed,	Only with special permission
Areas that need new forest roads should be placed in the landscape conservation buffer subzone. Construction of new forest roads in protection buffer sub-ones should only be possible when redirecting existing roads to new corridors to improve the conservation status of the property			
Public roads, railway	Not allowed	Not allowed	Allowed with positive ESIA and special permission
The total number, width and length of roads should not increase significantly in comparison to the amount at the time of inscription.			
Settlements / dwellings in building areas	Not allowed	Not allowed	Only allowed with special permission and restricted to building areas
The settlement area in the landscape conservation buffer sub-zone should not increase significantly (e.g. not more than 10 % compared to the time of inscription			
Ski slopes, cable cars, snow machines	Not allowed	Not allowed	Not allowed
Watchtowers, look-outs	Not allowed	Not allowed	Only with special permission
Natural hazard management (water management, protection from avalanches, rock fall…)	Only with special permission possible as long as natural processes in the beech forest are not disturbed	Only with special permission possible as long as natural processes in the beech forest of the component part are not disturbed	Possible, as long as natural processes in the beech forest of the component part are not disturbed
Whenever possible, tourism infrastructure and natural hazard management should be located outside the property and the protection buffer subzone.			
MAINTENANCE OF EXISTING INFRASTRUCTURE			
Beside hiking trails, there is hardly any significant infrastructure in the component parts. If possible, existing infrastructure should be moved outside the component part and the protection buffer subzone on the long-term perspective. If it is not possible to remove all existing infrastructure in the property and in the			

Land use	Property (WH component part)	Protection buffer subzone	Landscape conservation buffer subzone
protection buffer subzone, maintenance is allowed by national legislation. Visitor infrastructure (e.g. trails, information boards, cultural heritage) or natural hazard management infrastructure can be maintained in line with the national legislation in the property or protection buffer subzone. In the landscape conservation buffer subzone, the maintenance of existing infrastructure is allowed by national legislation. Maintenance of visitor infrastructure in this subzone is generally allowed. Removal of dead trees from the path (or parts of these) is possible inside the property as long the timber stays on the site.			
SCIENTIFIC RESEARCH			
Destructive scientific research (e.g. removing trees for measures)	Not allowed	Not allowed	Possible
Non-destructive research	With special permission possible	With special permission possible	Possible
Taking a core for age/growth analysis or collecting small samples for genetic assessment is not regardedas destructive.			
TOURISM AND RECREATION			
Expedition to caves	Not allowed	Not allowed	Possible
Extreme sports (paragliding, climbing, rafting)	Not allowed	Not allowed	Possible
Paragliding, climbing, and rafting are unlikely to have a negative impact on the integrity of the beech forest ecosystem, especially when it is conducted outside the property and the protection buffer subzone.			
Hiking on trails (including Nordic skiing)	Possible	Possible	Possible
Off-trail hiking	Not allowed	Not allowed	Possible
Riding, biking on trails	Not allowed	Not allowed	Possible
It is proved that legal restrictions are not as successful as visitor guidance by means of a proper and attractive trail system and awareness raising measures (information boards, leaflets, explanations by rangers …)			
MILITARY ACTIVITY AND (MOUNTAIN) RESCUE SERVICE			
Non-destructive military practices (e.g. survival training, fight in mountains and wooded terrain, etc.) as well as rescue services are allowed if they do not exceed the amount of practice before the inscription.			

These regulations are reflecting the minimum standards. Whenever possible, more strict regulations should be established to minimise human influence on the property.

Annex

References on buffer zone management, threats, and connectivity

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Literature review on microclimate and edge effects in forest ecosystems

The impact on the microclimate was addressed in several scientific papers. A review is summarized in Table 3 and in the following graphs (Figure 1, Figure 2, Figure 3, Figure 4).

Table 3: Overview on selected papers dealing with microclimatic edge effect of forest ecosystems.

Paper	Spatial microclimatic impact	Forest ecosystem
DAVIES-COLLEY et al., 2000	Up to 50 m into the forest	Native broadleaf rainforest, New Zealand
DIDHAM & EWERS, 2014	Vertical impact (experimental setup 16 m inside the forest)	Temperate rainforest, New Zealand
SPITTLEHOUSE et al., 2004	No significant impact of openings of less than one tree height in diameter	Spruce-fire Forest, British Columbia
JEMALI et al., 2017	Temperature effect up to 50 m, relative humidity 40-60 m	Tropical forest Malaysia
GEHLAHUSEN et al., 2000	Microclimatic effects disappear in 40-80 m. Exotic species mainly in the first 25 m.	Oak-Acer mixed forest, Illinoi, US
MATLACK, 1993	Microclimatic effects up to 50 m from the edge.	South-eastern Pennsylvania and northern Delaware, US
SLUITER & SMIT	Gap size effects on microclimate and soil moisture – Gaps from 40 to 3200 m²	Undisturbed forest: 13 experimental gaps of the Pibiri Gap Experiment (PGE)
GRAY et al., 2002	Effect of gap size on solar radiation and soil and air temperatures, response of water content in soil and common forest-floor substrates to gap formation and trends in soil moisture over several years	Douglas-fir forests of the Pacific Northwest, U.S. A
RITTER et al., 2003	Temporal and small-scale spatial variation in microclimate and soil moisture levels on gradients along the forest-gap continuum in irregularly shaped gap with a diameter of 24 m	Semi-natural beech dominated forest in Denmark.
DIDHAM & EWERS, 2014	Edge influence on vertical stratification of microclimate across the full vertical profile from ground level to upper canopy	Temperate rain forest, New Zealand

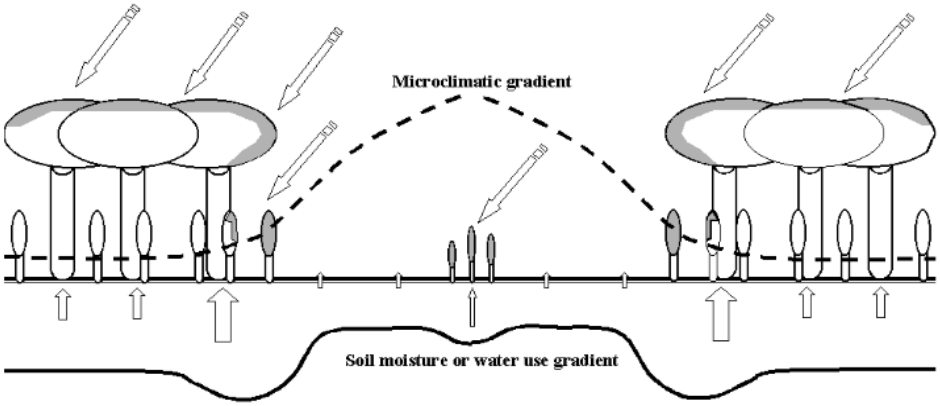


Figure 3.1 Gradients of microclimatic conditions (dashed line) and soil moisture or soil water consumption (solid line and solid arrows) in gaps. The gray areas on the vegetation are parts of the crowns that receive direct solar radiation (dashed arrows) and the small arrows in the gap represent direct soil evaporation. (see text for further explanation)

Figure 6 - R. Sluiter & N. Smit 2001: Gap size effects on microclimate and soil moisture.

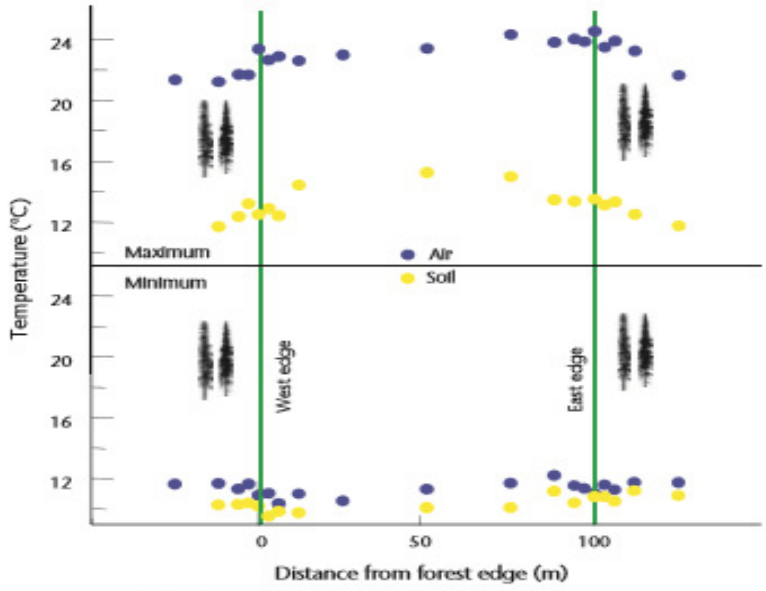


FIGURE 10 *Daily maximum and minimum air and soil temperature on a west–east transect from the forest through the 1-ha opening, August 9, 1997.*

Figure 7 - D.L. Spittlehouse, R.S. Adams, and R.D. Winkler, 2004: Forest, Edge, and Opening Microclimate at Sicamous Creek - Research Report 24

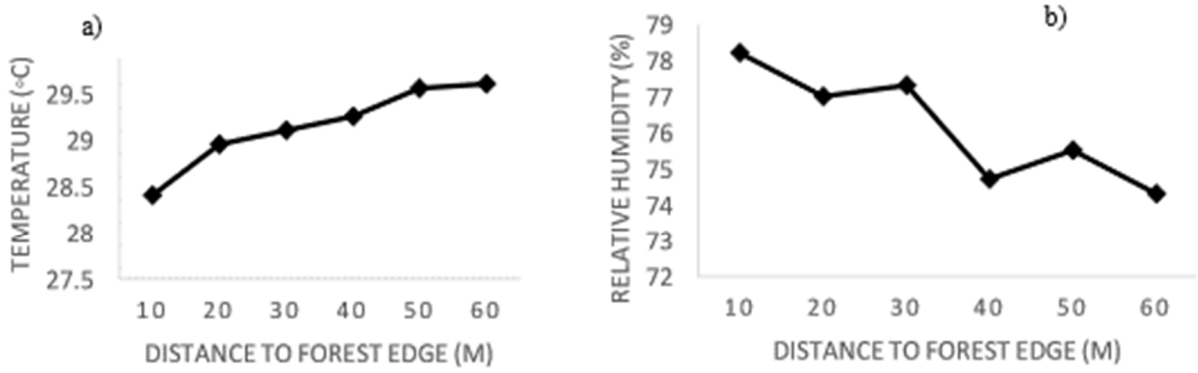


Figure 1 a) Relaive humidity and b) temperature pattern in study area

Figure 8 - Noor Jemali, Syafinie Abdul Majid, Saiful Sulaiman, Sadam KAHAR, Muhamad Faiz Arif, 2017. Microclimate and vegetation edge effects of Jeli forest in Kelantan

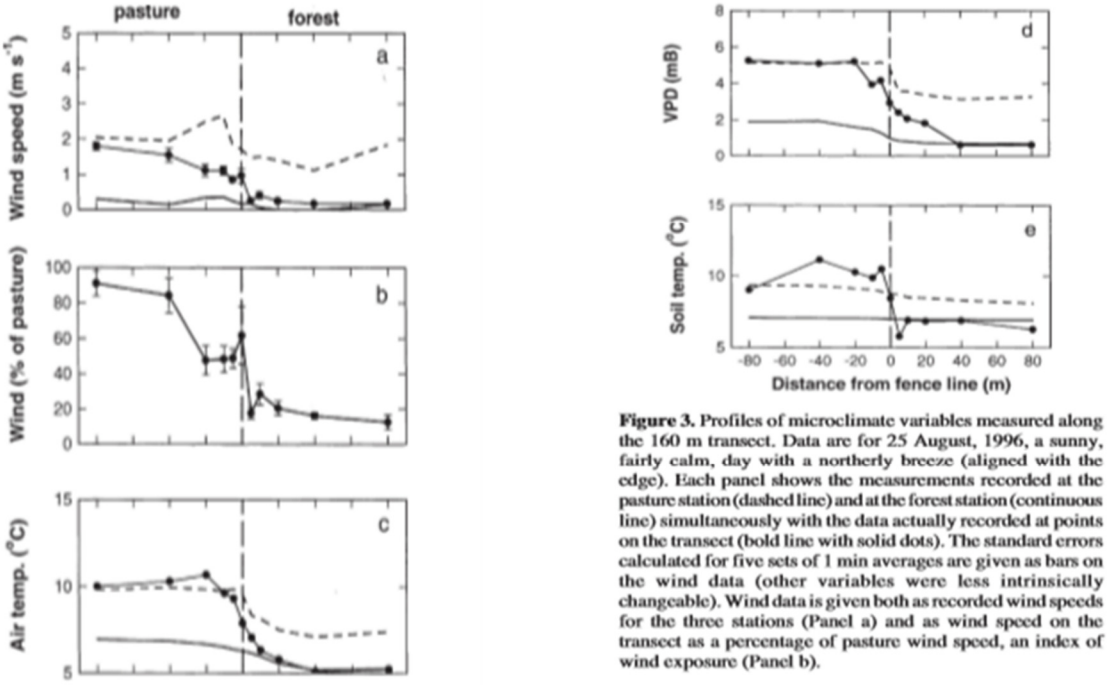


Figure 3. Profiles of microclimate variables measured along the 160 m transect. Data are for 25 August, 1996, a sunny, fairly calm, day with a northerly breeze (aligned with the edge). Each panel shows the measurements recorded at the pasture station (dashed line) and at the forest station (continuous line) simultaneously with the data actually recorded at points on the transect (bold line with solid dots). The standard errors calculated for five sets of 1 min averages are given as bars on the wind data (other variables were less intrinsically changeable). Wind data is given both as recorded wind speeds for the three stations (Panel a) and as wind speed on the transect as a percentage of pasture wind speed, an index of wind exposure (Panel b).

Figure 9 - R. J. Davies-Colley, G. W. PAYNE, and M. van Elswijk. Microclimate gradients across a forest edge. New Zealand Journal of Ecology · January 2000.

The results of the papers listed in Table 3 and of the graphs show impacts of openings on the microclimate up to 50 m(average) into the forest.
The depth of impact depends on the orientation of the forest edge. On edges exposed by sun and wind (in Europe mainly south and west) the impact is larger than on the opposite edges. Low impact is measured on the northernedges.
SPITTLEHAUSE et al. (2004) measured the impact of openings of different sizes on the microclimate. They documented that openings of less than one tree height in diameter have no significant impact on the microclimate.
According to SLUITER & SMIT, microclimate conditions were strongly influenced by gap size and the effect of the gap on the microclimate was noticeable beyond the perpendicular projection of the canopy opening. Gap size had the strongest influence on solar radiation and air temperature, which increased according to the increase of the gap size up to approximately 600 m² after which no increase was found. The effect of a gap on the air temperature decreased over time, as the vegetation in the gap was regenerating. Soil temperature was probably likewise, or even more, affected by soil cover and soil moisture. The extent of the gap on microclimatic variables was noticeable up to 10 m from the gap edge.
DAVIES-COLLEY et al. (2000) found that the edge effects on microclimate extend at least 40 m into native New Zealand rainforest. This result is also consistent with that of YOUNG & MITCHELL (1994) who discussed ramifications for terrestrial ecology and indigenous species conservation in New Zealand of the 50 m wide edge zone that they inferred from their microclimate data. They suggested that native forest remnants < 9 ha in area are dominated by edge microclimate conditions, and that remnants < 1 ha lack interior forest conditions.
Based on these results, a minimum distance of artificial openings larger than the height of one tree in diameter should be over 50 m from the property border to avoid negative long-term effects on the forest stands inside the property.
Especially alongside roads, railroads, and industrial sites there is an increased risk of emissions of gas, chemicals, noise, and light. Depending on the geomorphological situation and wind directions, the risk has different effective distances. The factor most difficult to assess is spatial distribution of air pollution. There is a short-distance buffer effect on dust and air pollution alongside roads, but in Europe we are facing long-distance distribution of air pollutants as well, which cannot be managed by buffer zones.
Transport infrastructure like roads and railroads are known as corridors of foreign species and pests. They were considered to have a medium to high impact on the forests inside the property in the future by several protected areas participating in the online survey. Depending on the individual ecology of invasive species and pests a buffer zone can help to increase protection. Only few of the invasive species known in Europe today have the capacity to alter beech forest ecosystems significantly. Pests like fungi affecting the beech tree itself pose the highest risk. The risk of invasive pathogens and species might change radically due to climate change.
SLUITER R. & SMIT N. 2001. Gap size effect on microclimate and soil moisture. In: Effects of gap size on water and nutrient cycling in tropical rain forest, a study in Guyana (O. van Dam, PhD. Thesis). Utrecht University, Faculty of Geographical Sciences, 49–66.

Literature review on climate change and beech forest ecosystems

European beech is known to respond more significantly to drought than numerous other broadleaved tree species in Central Europe (e.g., LEUSCHNER et al. 2001, BRÉDA et al. 2006).

The climate response and future distribution of *F. agus sylvatica* to global warming is controversially discussed (e.g., KÖLLING et al. 2007, KRAMER et al. 2010). RENNENBERG et al. (2004) assumed that by the end of the present century beech will no longer be in its optimum range in numerous locations where it is dominating nowadays. PEUKE et al. (2002) presumed that beech will be impaired in its physiological capacity, its growth, and competitiveness.
Beech trees have a notable potential to recover after drought periods (van der WERF et al. 2007) and show a high drought tolerance through a strong allocational plasticity (SCHALL et al. 2012, MÜLLER-HAUBOLD et al. 2013).
Besides the competition for light, competition for water plays another key role between F*agus sylvatica* seedlings and other competitors in the forest understory (FOTELLI et al. 2002, 2004, ROBSON et al. 2009). Therefore, increased frequency and duration of summer droughts will possibly harm the natural regeneration of this forest tree (GESSLER et al. 2007).
Some studies on the drought tolerance of *Fagus sylvatica* detected better adaptation of trees originating from drier than of moister origins in significant traits. Meanwhile, other studies detected only weak significant differences in the drought adaption of beech genotypes (e.g., ROSE et al. 2009, ROBSON et al. 2012, THIEL et al. 2014). It may be possible that provenances from the southern margin of the distribution can cope better with predicted climate warming in Central Europe (RENNENBERG et al. 2004, EILMANN et al. 2014).
F. KNUTZEN (2016) in his study concludes that global warming is already acting as a major stressor in F. sylvatica forest stands even in the centre of the species' distribution range. Current growth-reductions were detected in regions where precipitation in summer is below 200 mm. In future, growth reductions will also occur in today's moderately moist habitats. But it is not clear if growth limitations are contributing to investments into safety mechanisms or should be seen as loss of vitality. Beech showed high plasticity in most of the investigated morphological, physiological, and growth-related traits. Changes in vessel diameter, hydraulic properties and embolism resistance in mature beech trees and adjustment of cell wall elasticity in beech saplings show that beech has a substantial adaptive potential to respond to environmental climatic conditions. Also, the high trait variability within populations could represent a valuable source for adaptation in *Fagus sylvatica*. All this can be advantageous for the future well-being of *Fagus sylvatica* in Central Europe. However, it is doubtful whether these careful and slow evolving drought adaptions are enough to safeguard growth and vitality of *Fagus sylvatica* against the challenges by a rapidly warming and drying climate.
Climate change cannot be directly and significantly influenced, but locally and regionally the buffer and cooling capacity will depend on the wider landscape quality. Large, forested landscapes can help reduce maximum temperatures and fluctuations as well as wind speeds and evapotranspiration. It is of equal importance to manage the water retention capacity of the forest ecosystems within and around the component parts. This can be done by appropriate strategies of landscape conservation and the sustainable development function of the buffer zone and surrounding landscapes.

Size of components and buffer zone

	Component part/cluster	State Party	Component (ha)	Bufferzone (ha)
1	Lumi i gashit	Albania	1.261,52	8.977,48
2	Rrajca	Albania	2.129,45	2.569,75
3	Durrenstein	Austria	1.867,45	1.545,05
4	Kalkalpen-Bodinggraben	Austria	890,89	
5	Kalkalpen-Hintergebirge	Austria	2.946,20	
6	Kalkalpen-Uriach	Austria	264,82	14.197,24

7	Kalkalpen-Wilder Graben	Austria	1.149,75	
8	Sonian Forest – Forest Reserve “Joseph Zwaenepoel	Belgium	187,34	
9	Sonian Forest – Grippensdelle A	Belgium	24,11	
10	Sonian Forest - Grippensdelle B	Belgium	37,38	
11	Sonian Forest - Réserve forestière du Ticton A	Belgium	13,98	
12	Sonian Forest - Réserve forestière du Ticton B	Belgium	6,50	4.650,86
13	Central Balkan - Dzhendema Reserve	Bulgaria	1.774,12	2.576,63
14	Central Balkan - Kozya stena Reserve	Bulgaria	644,43	289,82
15	Central Balkan - Peeshti skali Reserve	Bulgaria	1.049,10	968,14
16	Central Balkan - Severen Dzhendem Reserve	Bulgaria	926,37	1.066,47
17	Central Balkan - Sokolna Reserve	Bulgaria	824,90	780,55
18	Central Balkan - Stara reka Reserve	Bulgaria	591,20	1.480,04
19	Central Balkan - Steneto Reserve	Bulgaria	2.466,10	1.762,01
20	Central Balkan- Boatin Reserve	Bulgaria	1.226,88	851,22
21	Central Balkan- Tsarichina Reserve	Bulgaria	1.485,81	1.945,99
22	Hajdučki i Rožanski kukovi	Croatia	1.289,11	9.869,25
23	Paklenica National Park - Oglavinovac-Javornik	Croatia	790,74	395,35
24	Paklenica National Park - Suva draga-Klimenta	Croatia	1.241,04	414,76
25	Grumsin	Germany	590,1	274,30
26	Hainich	Germany	1.573	4.085,40
27	Jasmund	Germany	492,5	2.510,50
28	Kellerwald	Germany	1.467	4.085,40
29	Serrahn	Germany	268,1	2.568,00
30	Abruzzo, Lazio & Molise - Coppo del Morto	Italy	104,71	415,51
31	Abruzzo, Lazio & Molise - Coppo del Principe	Italy	194,49	446,62
32	Abruzzo, Lazio & Molise - Selva Moricento	Italy	192,70	
33	Abruzzo, Lazio & Molise - Valle Cervara	Italy	119,70	751,61
34	Abruzzo, Lazio & Molise - Val Fondillo	Italy	325,03	700,95
35	Cozzo Ferriero	Italy	92,53	
36	Pollino National Park	Italy	477,94	2.771,08
37	Foresta Umbra	Italy	182,23	1.752,54
38	Monte Cimino	Italy	57,54	87,96
39	Monte Raschio	Italy	73,73	54,75
40	Sasso Fratino	Italy	781,43	6.936,64
41	Valle Infernale	Italy	320,79	2.191,36
42	Cheile Nerei-Beușnița	Romania	4.292,27	5.959,87
43	Codrul secular Șinca	Romania	338,24	445,76
44	Codrul Secular Slătioara	Romania	609,12	429,43
45	Cozia – Lotrisor	Romania	1.103,30	
46	Cozia - Masivul Cozia	Romania	2.285,86	2.408,83
47	Domogled - Valea Cernei - Ciucevele Cernei	Romania	1.104,27	
48	Domogled - Valea Cernei - Domogled-CoroniniBedina	Romania	5.110,63	
49	Domogled - Valea Cernei - Iauna Craiovei	Romania	3.517,36	51.461,28
50	Grosii Țibleșului - Izvorul Șurii	Romania	210,55	
51	Grosii Țibleșului – Preluci	Romania	135,82	563,57

52	Izvoarele Nerei	Romania	4.677,21	2.494,83
53	Strîmbu Băiuț	Romania	598,14	713,09
54	Havesova	Slovakia	167,87	
55	Stuzica-Bukovske vrchy	Slovakia	1.742,33	
56	Rozok	Slovakia	74,55	
57	Udava	Slovakia	453,75	14.123,93
58	Vihorlat	Slovakia	1.559,41	847,54
59	Kyjovsky-prales	Slovakia	289,39	104,46
60	Krokar	Slovenia	74,50	47,90
61	Snežnik-Ždrocle	Slovenia	720,24	128,60
62	Hayedos de Ayllón – Montejo	Spain	71,79	
63	Hayedos de Ayllón - Tejera Negra	Spain	255,52	13.880,86
64	Hayedos de Navarra - Aztaparreta	Spain	171,06	
65	Hayedos de Navarra - Lizardoia	Spain	63,97	24.494,52
66	Hayedos de Picos de Europa - Canal de Asotin	Spain	109,58	
67	Hayedos de Picos de Europa - Cuesta Fría	Spain	213,65	14.253,00
68	Chornohora	Ukraine	753,48	4.637,59
69	Gorgany	Ukraine	2.476,80	12.925,00
70	Kuzi-Trybushany	Ukraine	1.369,60	3.163,40
71	Maramosh	Ukraine	2.243,60	6.230,40
72	Roztochya	Ukraine	348,81	598,21
73	Satanivska Dacha	Ukraine	212,01	558,37
74	Stuzhytsia- Uzhok	Ukraine	2.532,00	3.615,00
75	Svydovets	Ukraine	3.030,50	5.639,50
76	Synevyr – Darvaika	Ukraine	1.588,46	312,32
77	Synevyr – Kvasovets	Ukraine	561,62	333,63
78	Synevyr – Strymba	Ukraine	260,65	191,14
79	Synevyr – Vilshany	Ukraine	454,31	253,85
80	Uholka-Shyrokhyi Luh	Ukraine	11.860,00	3.301,00
81	Zacharovanyi Krai – Irshavka	Ukraine	93,97	
82	Zacharovanyi Krai - Velykyi Dil	Ukraine	1.164,16	1.275,44
		Total	**91.303,16**	**259.365,55**

7.3 Supplementary information on Forest management operations

Supplementary Information to the State Party Report on the State of Conservation of the Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe

Submitted by Belgium on behalf of the States Parties:
Germany, Italy, Romania, Spain, and Ukraine
Reference Number: 1133ter
In response to World Heritage Committee Decision: 44 COM 7B.99

[November 2021]

1. Contextualization

The World Heritage Centre requested additional details on the operations in the buffer zones that were met with serious concern from the following States Parties:

- Germany
- Italy
- Romania
- Spain
- Ukraine

This request was communicated through the World Heritage Committee Draft Decision: 44 COM 7B.99 and ought to be submitted by the 1st of December 2021. Detailed information on the forestry operations currently permissible in the buffer zones of the property, as well as a full list of potentially affected component parts and buffer zones should be submitted. Furthermore, a subsequent technical workshop with IUCN and the World Heritage Centre and in conjunction with the other States Parties to consider the means by which concerns over these activities could be resolved, will take place.

2. Previous info shared with WHC/IUCN

In March 2021 the following info was sent to the World Heritage Centre in response to World Heritage Committee Decisions 42 COM 7B.71 and 43 COM 7B.13 and the letter CLT/WHC/EUR/19/12594 dated 22 April 2020[14]

Table 4: Overview on regulations of logging in buffer zone for those clusters, where shelter wood cuttings or clear cuts are not fully forbidden (AsA: Allowed on specific areas, AsP: Allowed with special permission, GA: Generally allowed).

Country	Cluster/Component	Clear cuts < 0,3 ha	Clear cuts > 0,3 ha	Shelterwood cuttings < 0,3 ha	Shelterwood cuttings > 0,3 ha
DE	Grumsin	AsA		AsA	
ES	Hayedos de Ayllón - La Mancha	AsP	AsP	AsP	AsP
ES	Hayedos de Ayllón - Madrid			AsP	AsP
ES	Hayedos de Navarra	GA	AsA	GA	GA
ES	Hayedos d. Picos d. Europa		AsP		
IT	Abruzzo, Lazio & Molise NP				
IT	Monte Raschio	AsP	AsP	AsP	
IT	Sasso Fratino			GA	
RO	Cheile Nerei-Beușnița			GA	
RO	Cozia			GA	
RO	Domogled - Valea Cernei			GA	
RO	Groșii Țibleșului	GA	GA	GA	
RO	Izvoarele Nerei			GA	
RO	Strâmbu Băiuț	GA	GA	GA	
UA	Uzhanski NNPk	AsA	AsA	AsA	AsA

[14] Supplementary Information to the State Party Report on the State of Conservation of the Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe submitted by Belgium on behalf of the States Parties. Albania, Austria, Belgium, Bulgaria, Croatia, Germany, Italy, Romania, Slovakia, Slovenia, Spain, Ukraine; Reference Number: 1133ter; in response to World Heritage Committee Decisions 42 COM 7B.71 and 43 COM 7B.13 and the letter CLT/WHC/EUR/19/12594 dated 22 April 2020

3. Definitions used in this document

In the Guidance document on buffer zone management and buffer zone zonation, which was submitted to IUCN in April 2021 a Glossary on Forest management terms used by the Unesco WHS "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe" was included (cfr annex 4).
According to these definitions:

- **Clear cut < 0.3 ha is considered as a 'group felling'** [15]
- **Clear cuts and shelterwood cutting were defined as forest interventions with a minimal area of 0.5 hectare instead of 0.3 ha**
- **Shelterwood is used for Uniform shelterwood systems which means that the seed cut, and removal cut are applied to the entire stand area**
- **Group shelterwood system is a less intensive forest intervention where cuttings are limited to plots of max. 0.5 ha**

The forest terminology used in this document is in line with the definitions used in the Guidance document for buffer zone management of the WHS "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe", version April 2021.

4. Additional details on forestry operations

5.1 Germany – Grumsin

5.1.1 Management in the property

No intervention in the property is allowed.

5.1.2 Management in the buffer zone

The situation in the buffer zone (total of 274 ha) of the component part 'Grumsin' is described as follows:

Only in the north-western part of the buffer zone forestry use is prohibited, because it is part of the core zone 'Grumsin' of the Schorfheide-Chorin biosphere reserve. This area of 65 ha did not become part of the world heritage property, because it consists mostly of artificial former pine plantations (developing now towards natural forest types).

A further 49 ha within the buffer zone at the northern boundary of the property is owned by the supporting association of the biosphere reserve (Kulturlandschaft Uckermark e.V.) and has been without intervention since 1990, although forestry use would be allowed according to the biosphere reserve decree (the area belongs to the buffer zone of the biosphere reserve).

Summarising, out of the 274-ha buffer zone, 114 ha has been without any intervention since 1990 (65 ha due to the biosphere reserve decree, plus an additional 49 ha provided by voluntary commitments).

[15] Clearcutting system: In the context of this document, we define a minimum surface of 0.5 ha. Intervention areas smaller than that are covered as 'group fellings' or 'femel cutting'.

Clearcutting

The remaining parts of the buffer zone southwest, south and east of the property are privately owned forests in the buffer zone of the biosphere reserve. Here, forestry use is allowed with the following restrictions according to the biosphere reserve decree (= NatSGSchorfhV):

- Clearcuts larger than 0.3 ha are prohibited (§6 (1) no. 10 NatSGSchorfhV).
- afforestation with non-native tree species is prohibited (§6 (1) no. 11 NatSGSchorfhV).
- 'Forestry use has to be performed according to the management plans' of the biosphere reserve (§5 (1) no. 13 NatSGSchorfhV).

Shelterwood cutting

Shelterwood cutting is not prohibited according to the BR decree itself.
But "forestry management is to be performed in accordance with the conservation management plan" ("Die Forsteinrichtung hat sich nach den Pflege- und Entwicklungsplänen zu richten", §5 Abs. 1 Nr. 13).
According to the current FFH habitat management plan for this FFH site from 2015, only selective cutting (single trees and groupwise cutting) (dauerwaldartige Nutzung mit einzelstamm- und gruppenweise Nutzung) is allowed, referring to the "Best Practice Handbook - Nature Conservation in Lowland Beech Forests used for Timber" (Winter et al. 2015).
Thus, shelterwood cutting is currently not allowed.

In the Natura 2000 habitat management plan for the site (which serves also as management plan of the biosphere reserve), selective cutting is prescribed, and the plan refers to the conservation-sound beech forest management system agreed with the state forestry administration, which is published in German and English (Winter et al. 2020: Best Practice Handbook – Nature Conservation in Beech Forests Used for Timber. Nature conservation objectives and management recommendations for mature beech forests in north-eastern Germany. Publisher: Ministry of Agriculture, Environment and Climate Protection of the Federal State of Brandenburg).

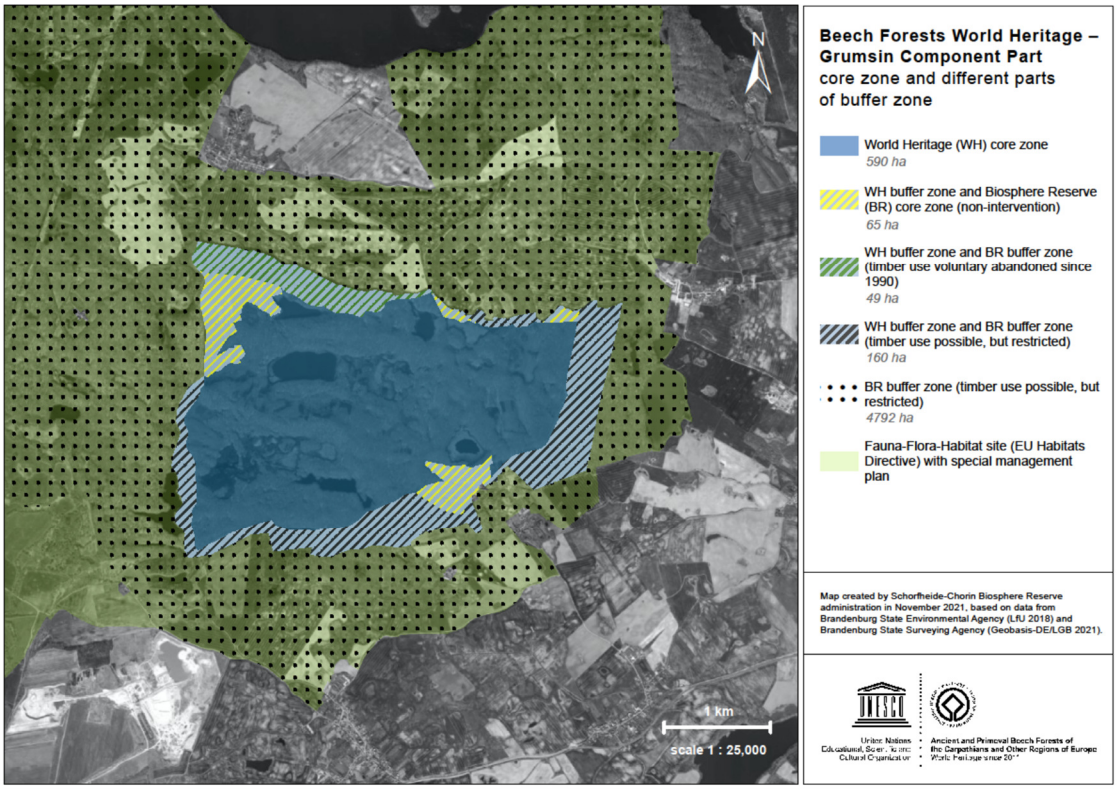
The biosphere reserve administration seeks to secure the implementation of these targets through negotiations with the private forest owners and aims to agree extensive forestry use or complete non-intervention by nature conservation contracts (Vertragsnaturschutz). For an area of 430 ha of beech forests west of the property, directly adjacent to its buffer zone, in 2021 complete non-intervention was agreed for at least the next 20 years by a contract with the forest owner. Other parts of the buffer zone and surrounding forests are owned by a large number of small-scale forest owners and are mostly used on a low level for firewood only.

Wherever possible, the state of Brandenburg purchases forest areas in the buffer zone.

Summary

Referring to the IUCN demands it has to be stated, that in the world heritage buffer zone (274 ha) timber use is **only prohibited in a section area of 65 ha. In the remaining parts of the buffer zone timber use is permitted**; **but clearcuts >0.3 ha and afforestation with non-native species are prohibited**. **Shelterwood cutting is not allowed**. The timber use must not contradict the Natura 2000 management plan and has to be performed according to a conservation-sound forest management system for mature beech forests agreed with the state forest administration in 2015 (Winter et al. 2020).

Wherever possible, the biosphere reserve administration seeks to secure a very extensive, conservation-sound forestry (selective cutting) and, if possible, non-intervention management by nature conservation contracts with private forest owners and by land purchase.



Map1: Grumsin, core zone and different parts buffer zone

5.2 Spain

In Spain, six components of the transnational serial World Heritage property have been constituted, grouped two by two in three clusters: Cluster Hayedos de Ayllón, Cluster Hayedos de Picos de Europa and Cluster Hayedos de Navarra.

Historical evolution of timber extraction and forest management

After the early days, when forest exploitation was not based on conservation rules, only small patches of territory were left out of human intensive transformation, usually due to inaccessibility or historical management issues. These patches have generally been the precursors of the areas considered as forest reserves, planned for their natural evolution. Some of them are nowadays the six W.H. properties. Since the beginning of the 20th century, modern silvicultural management has been carried out to maintain healthy and productive forests, based on the knowledge of the time. For more than a century the main silvicultural operations in the area surrounding the properties were based on a Uniform Shelterwood System. Thinning was applied on young stands and regeneration cuttings were concentrated at the end of the rotation (around 100 to 120 years) and applied to big forest stands (called "blocks", of around 200 hectares). That system was conducted through a Management Plan for each of the forests in the area with the idea of preserving the forest and its timber productivity as a main goal. But in the course of history, a large part of the territory had lost its forest cover (especially in the interior part of the Iberian Peninsula, for us the area around the cluster Hayedos de Ayllón). To achieve the restoration of the original vegetation cover, large reforestation works were undertaken, especially from the middle of the 20th century. These works were mainly undertaken with species of the genus Pinus, more rustic to be able to develop in degraded lands. Also, in those years reforestations with exotic species were carried out to achieve good yields of wood production.

5.2.1 Management in the property

No intervention in any property of any cluster is allowed.

5.2.2 Management in the buffer zone

Hayedos de Ayllón

In the area, extensive repopulations of Scots pine (*Pinus* sylvestris) were planted in the year 1950 on shrub areas that had originally been covered with oak (*Quercus* pyrenaica) or beech forests. More than 50 years after the installation of these artificial stands at the beginning of the 21st century the Regional Forest Administrations began to carry out thinning works. Currently in the surroundings of the Tejera Negra and Montejo de la Sierra properties, the main objective is to recover the original beech and oak coverage. These thinning works are in theory inscribed in a general scheme of a shelterwood system that would entail the regeneration cutting of the pine forests around the age of 100 to 120 years, but probably when reaching that age, it will not be necessary to carry out the final cut anymore because a sufficient beech and/or oak cover will have been formed to cover all the ground under the pine canopy.

Clearcutting

No clear cuts are carried out in the buffer zone.

Shelterwood cutting

In the buffer zone, **shelterwood treatments** are not carried out.

Only in some specific enclaves and under special permission, tendering actions have been programmed to reinforce old stumps with sanitary problems to gradually transform the original coppice forest to high forest (forest composed by trees born from seeds). The total surface of these actions does not exceed 20 ha.

Hayedos de Navarra

Forest Management Plans for the different forests in the area were approved around 1904 by the competent authorities and certain parts of the large Irati forest massif began to be exploited, mainly removing timber by floating it through the rivers and after that constructing forest roads. Since then, the shelterwood system was always the main way to obtain timber and regenerate the forest.

Due to various international and later local conflicts, logging did not begin until the 1960s in La Cuestion forest. At that time, it was decided that a stand of this impressive beech-fir forest should be retained as a Reserve to preserve it as an undisturbed forest. That is the origin of Lizardoia property which was legally protected as Strict Reserve in 1986. Also since 1998 through the regulations of the management plans, some forest stands reaching 5% of the total area were preserved out of logging to set up a network of "areas left aside for natural evolution". Aztaparreta property is located in such a remote and inaccessible area where it was never possible to extract timber. It was also protected as Strict Reserve in 1986.

Silvicultural management was re-formulated in the last revisions of the Management Plans (they are revised and improved approximately every 10 years) to produce not only harvesting of timber resources but also a good habitat for wildlife. This way, as a result of the sustainable management and a good conservation status of these forests, the whole area was designated as a Natura 2000 site, complying with all the necessary conservation requirements marked by the Habitats Directive.

Clearcutting

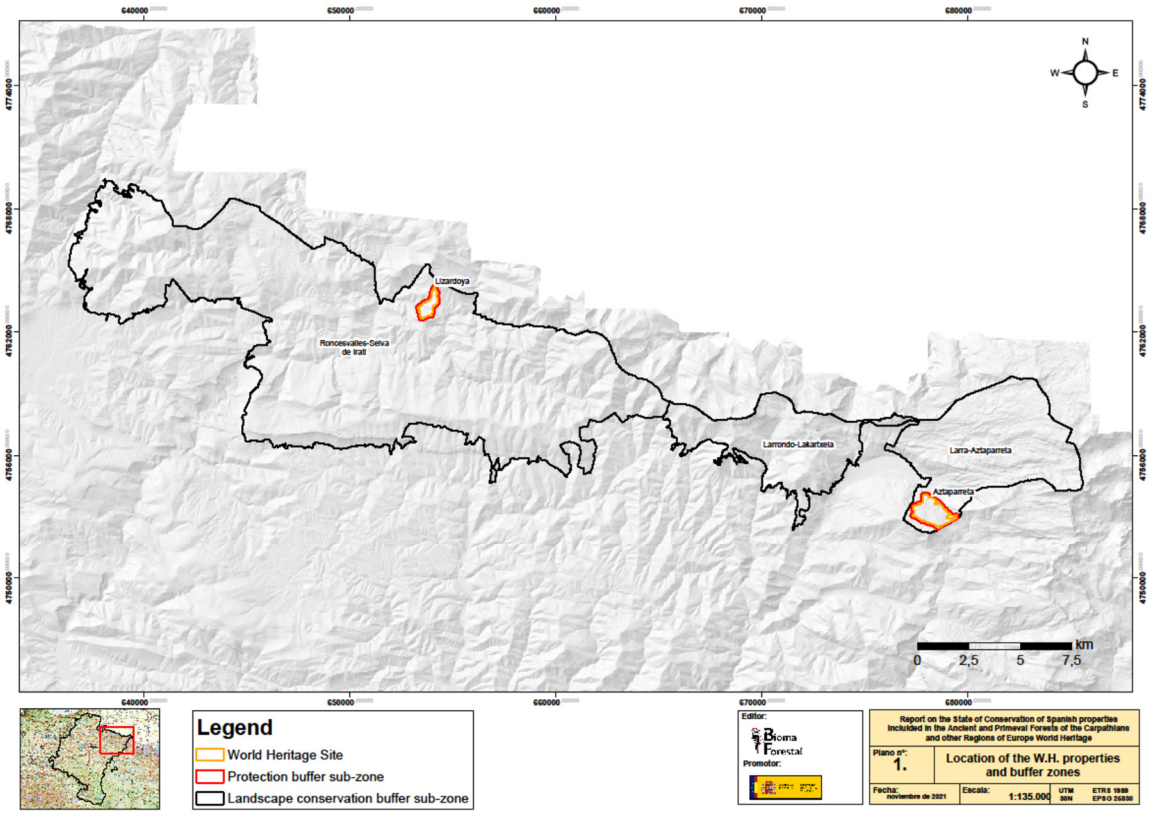
Besides the dominant beech forest cover, there are some patches of native Pi*nus sylvestris* and small stands of non-native species as *Larix kaempferi* and *Pseudotsuga menziesi*. **As an exception, they are exploited through a clear-cut system, only in accordance with the approved management plans for Natura 2000 and the approved forest management plans**. **These actions are implemented as restoration towards natural habitats of non-native forest stands or maintenance of light-demanding species as *Pinus sylvestris*. The joint surface of these actions is never larger than 1% of the landscape conservation sub-zone. Special permission is mandatory.**

Shelterwood cutting

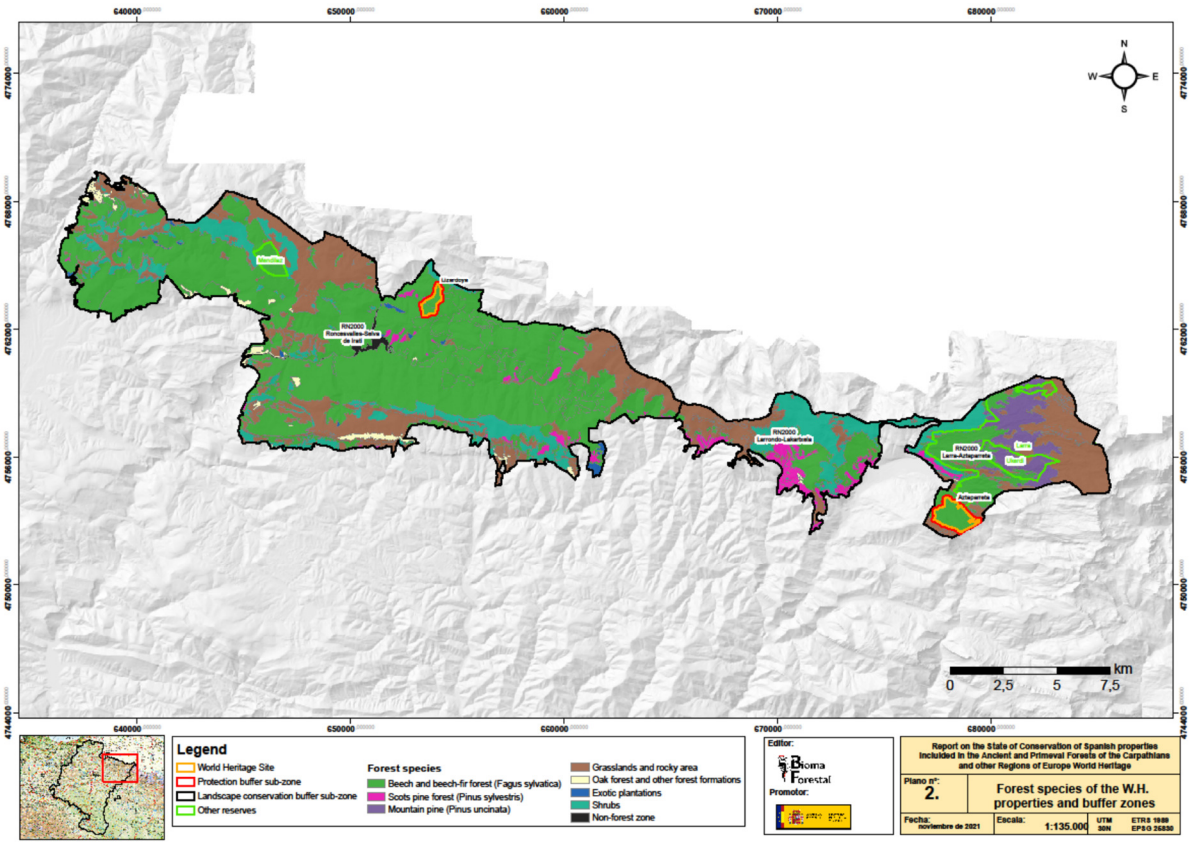
A shelterwood system is conducted in the buffer zone of Hayedos de Navarra. It has been applied historically because of the excellent results in enabling good regeneration in these southern beech forests. Recently an adaptation of the method was applied, leading to a less intensive application of the Uniform Shelterwood System reducing the average size of the intervention, with the important implementation of deadwood and tree-habitats retention, essential to favour species that depend on older and dead trees.

So nowadays, more than 120 years after the implementation of modern silviculture, we can observe the results of this kind of management directly on the forest: an extensive natural woodland that provides habitat for important forest species, some of them extinct in other parts of Europe. The big size designed for the buffer area plays a fundamental role in preserving the landscape and maintaining connectivity in these forests.

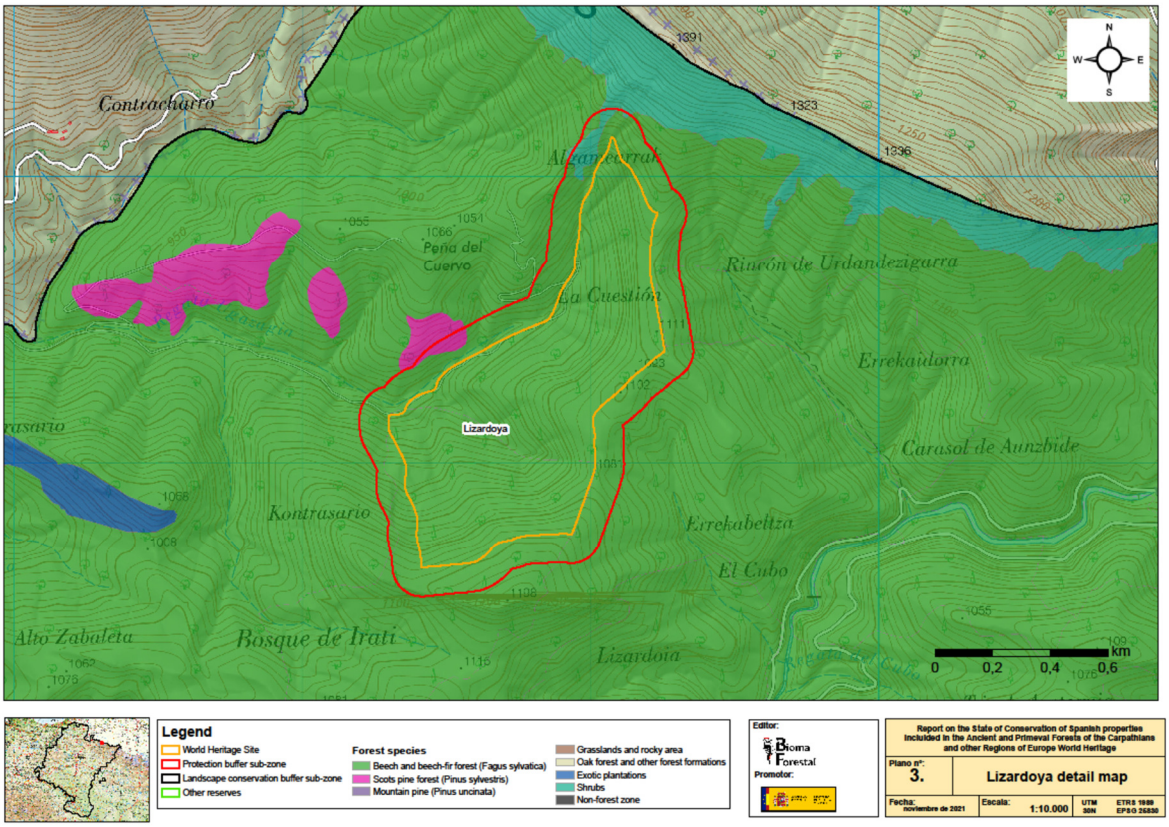
The maps below show the situation in the Hayedos de Navarra indicating the property and the vegetation types.



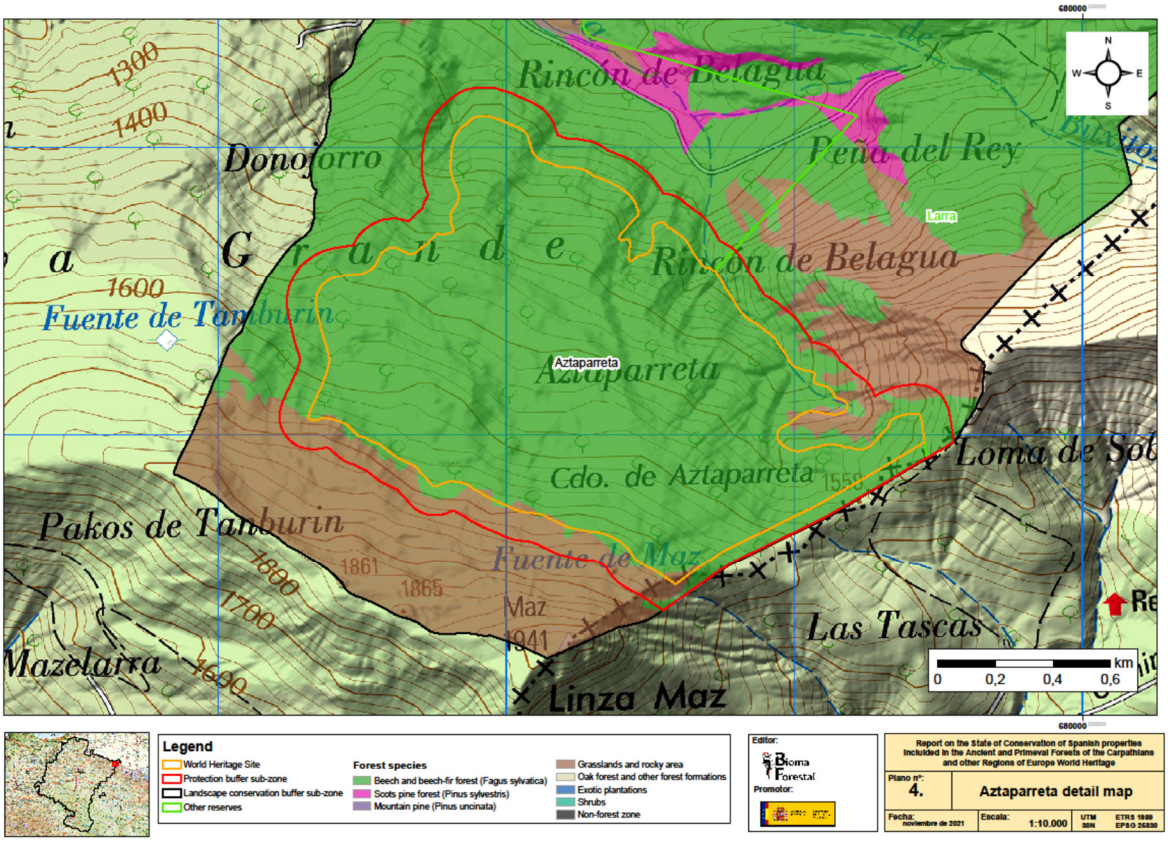
Map 2: Location WH Navarra



Map 3: Forest vegetation WH Navarra



Map 4: Lizardoia detail maps



Map 5: Aztaparetta detail map

Hayedos de Picos de Europa

In 1918 the Covadonga National Park was declared in the Cantabrian Range, including the Canal de Asotín property. Until the 1980's logging was allowed in the whole area of the National Park but with a weak regime of exploitation and some remote areas were too far away for a major human impact.
Since then **the only allowed timber exploitation is the extraction of limited firewood for the inhabitants of the small villages located within the bounderies of the National Park**. To date this firewood extraction is carried out through **low intensity thinnings** which has hardly any impact on the global structure of the beech forest.
In 1995 the Covadonga National Park was extended and it was renamed to Picos de Europa National Park, covering a larger area, including Cuesta Fría property. Regarding the human impact on the components, **due to their inaccessibility they have probably never been logged, just visited by shepherds and their cattle, taking some firewood for their subsistence**.

Clearcutting and shelterwood cutting

Within the buffer zone no clear cuts nor shelterwood cuttings take place.

Summary

Forest management in the different buffer zones around the Spanish properties is always conducted to achieve the provision of ecosystem services (including in some cases the timber supply in a sustainable way) while ensuring the conservation of the beech ecosystem, and especially in order to protect the Outstanding Universal Values (OUV) of the properties.
There are different approaches in each of the clusters, depending on biogeographic and political issues. The traditional management in these forests is very important for local stakeholders, especially in Irati forest around Lizardoia property. **The buffer zone of Hayedos de Navarra shelterwood cutting takes place as described**.

It is important to highlight that all these buffer zones are legally protected, on different categories: National Park, Natural Park, Natura 2000 site or Biosphere Reserve. That means that every little part of these buffer zones is protected under legal regulations that must be complied with and that ensure the maintenance of essential ecosystem functions and the conservation of the territorial connection. These regulations are monitored and enforced by the territory managers.

5.3 Italy

The component parts for which further details are requested are National Park Abruzzo, Sasso Fratino and Monte Raschio.

5.3.1 Management in the property

No intervention in the property is allowed.

5.3.2 Management in the buffer zone

National Park Abruzzo

Clear cutting and shelterwood cutting

All the core areas and buffer zones of the five WHS beech forests are situated in strict non-intervention areas.

Monte Raschio

Clearcutting

Clear cuts in Italy are generally forbidden by the regional laws. There could be exceptions, such as for artificial conifer stands, or for other very particular situations. As a consequence clear cut are not practised in WHS buffer zones.
The information provided in March 2021 (table 1 of this document) was probably caused by a misunderstanding.

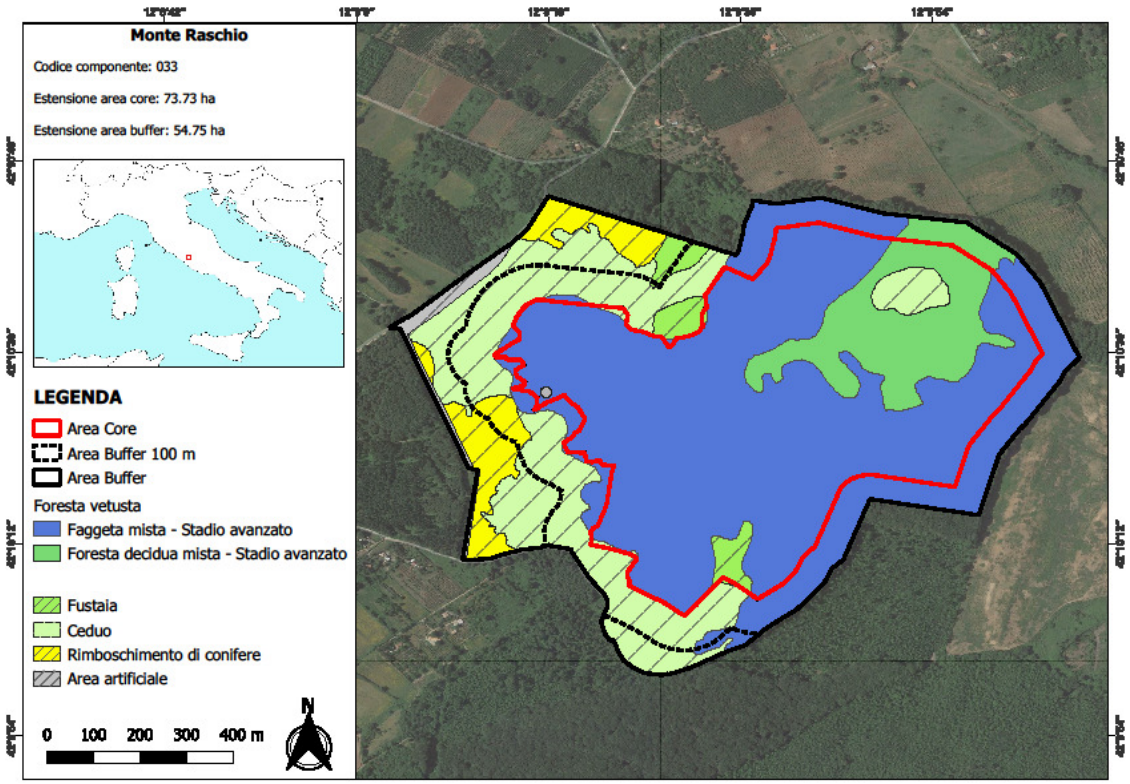
Shelterwood cutting

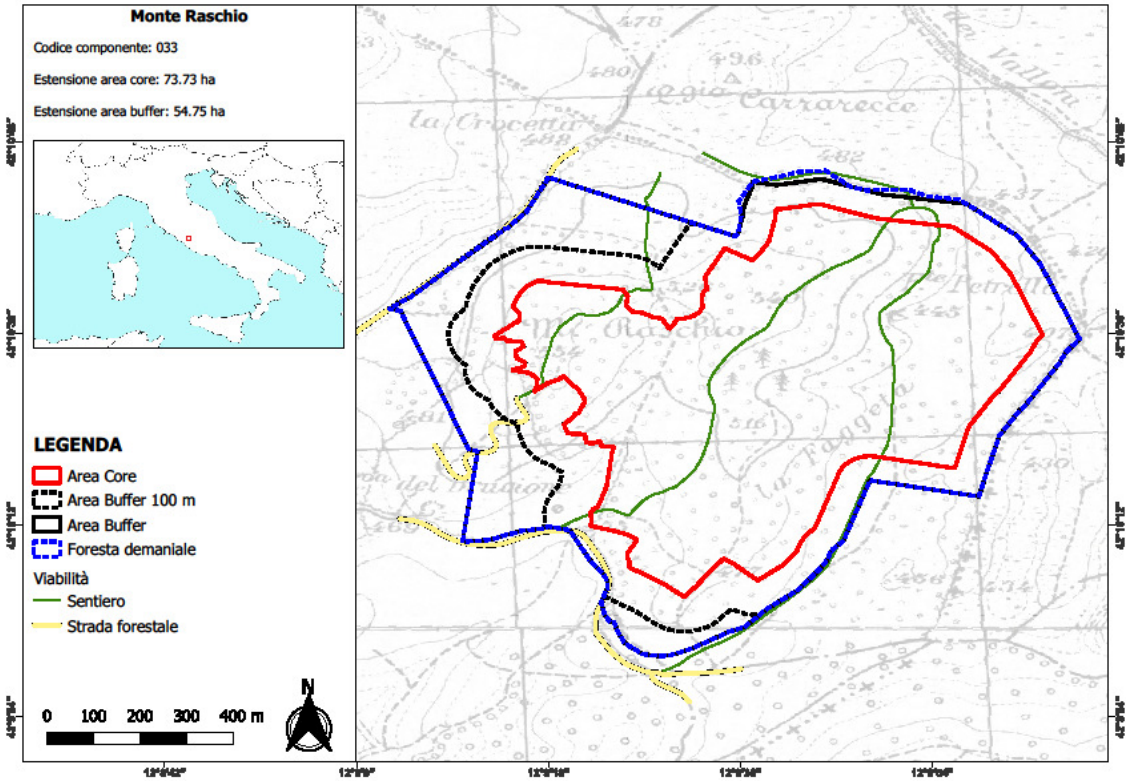
The shelterwood cuts mentioned in table 1 of this document need to be corrected as tending operations. Both in Protective and in Landscape Conservation Buffer zone, there are

- some *Pinus domestica* and *Pinus radiata* artificial populations, that sometimes touch the core area. The presence of conifers is very dangerous and increases the risk of forest fire, that could really threaten the outstanding universal values (OUV) of the Monte Raschio WHS site. For this conifer area of about 10 ha, it is necessary to foresee tendering cuts (the last one happened 15 years ago) to prevent this risk.
- old coppices (beech mixed with other species). In this case we can talk about “Uneven-aged silvicultural system”: it would be possible to foresee small cuts to improve the structure of these stands, with the aim to obtain an uneven-aged stand forest.

Every intervention needs **the permission of Ente Parco Naturale Regionale di Bracciano and will be in line with the Guidance Document on Buffer Zone Management**.

A map indicating the location of these two kinds of stands is added below: “Rimboschimento di conifere” is artificial conifers stand and “Ceduo” is old beech coppice.





Map 6: Monte Raschio

Sasso Fratino

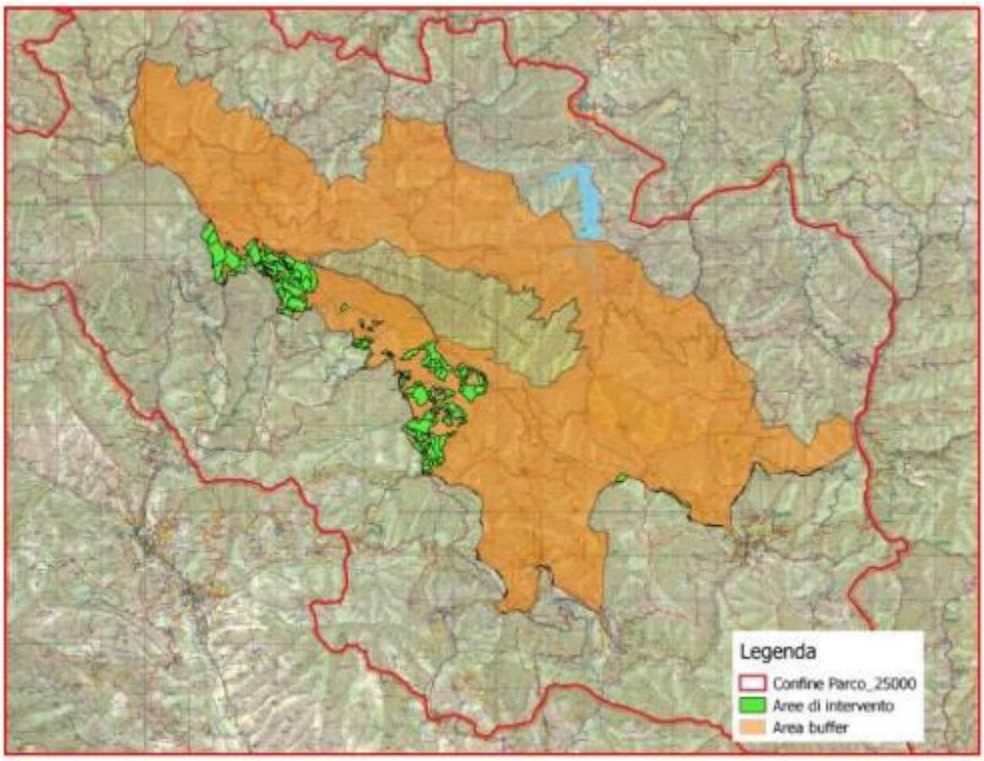
More than half of the buffer zone is in the State property (Biogenetic State Reserve), in this part forestry intervention is not possible.

The remaining part of the buffer zone is property of the Emilia Romagna and Toscana regions. The park is currently working on an agreement with the public body "Union of the Municipalities", manager of this regional property, with the aim to stop interventions in this area. **The new Forests Management Plan of the Toscana region already foresees non-intervention inside the buffer areas.**

A) Tuscan region

The last interventions in the buffer zone have been carried out in 2017 around property of the Tuscan region (cfr green areas on the map below). These interventions were foreseen by the existing Management Plan of that complex, carried out by the Union of Municipalities of the Casentino for the period 2008 - 2017.

The effective application of the plan was approximately 360 ha, 5% of the buffer area (6940 ha). This type of interventions refers to cuts aimed at supporting the ongoing structural development, such as the thinning of forests of different types (e.g. tendering and phytosanitary cuts in conifers stands, tendering cuts to improve the value of old beech-coppices stands, ...).



Map 7: SASSO FRATINO- Tuscan region

B) Emilia-Romagna and the State Property

For the remaining part of the buffer area (Emilia-Romagna and the State Property), there are no significant interventions except for punctual phytosanitary operations (sanitary cuttings) and salvation cutting after meteorologic events.

The letter written by Parco Nazionale Foreste Casentinesi, about the management of buffer zones can be found in annex (Cfr annex 2 below).

5.4 Romania

An overview of the management regime of the buffer zones and the management operations in the Ancient and Primeval Beech Forest of the Carpathians and other Regions of Europe, was given in the report of Romania, joint world heritage centre/IUCN reactive monitoring mission, 13/11-18/11/2019

5.1.1 Management in the property

No intervention in the property is allowed, all components have a non-intervention regime.

5.1.2 Management in the buffer zone

Romania's UNESCO site components have a total buffer zone area of 64,449.7 ha (the largest of the series).

A general explanation is given below, more specific information per cluster is provided afterwards.

Clear cutting

Romania reiterates that clear cuttings are banned.

Shelterwood cutting (and other forest interventions)

In 2020 and 2021, in accordance with the provisions of the national park management plans (where appropriate) and the harmonised forest management plans, both approved through a Ministerial Order, the forest interventions were carried out in a sustainable way on a total area of 1544 ha (2.4% of the buffer zone) and a total volume of 71,781 m3 (an average of 23 m3/ha*year in the plots with interventions or 0.55 m3/ha*year in the entire buffer zone)

The distance between the components and the forest interventions area was more than 50 m, thus the negative impacts from the opening of the canopy to the property are not present. The average distance is 5.1 km in 2020 and 3.1 km in 2021.

For transparency, a detailed list of forest works in the buffer zones in 2020 and 2021, can be found in annex 3, attached to this file and an overview is presented below.

Table 2: Overview of the forest operations per cluster in 2020 and 2021.

Crt. No.	Component Name	Buffer zone				
		Total area (ha)	Intervention area in 2020 (ha)	Harvested volume in 2020 (m3)	Intervention area in 2021 (ha)	Harvested volume in 2021 (m3)
1	Izvoarele Nerei	**2494.8**	9.0	2494.8	47.8	3816
2	Cheile Nerei-Beușnița	**5959.9**	66.9	2950	91.3	3752
3	Domogled-Valea Cernei cluster	**51461.3**	730.5	30352	354.3	19356
4	Cozia	**2408.8**	5.3	8	42.5	2022
5	Codrul secular Sinca	**445.8**	0	0	18.0	3738
6	Codrul secular Slătioara	**429.4**	0	**0**	0	0
7	Groșii Țibleșului	**463.6**	8.0	1747	10.3	310
8	Strâmbu-Băiuț	**713.1**	71.6	707	88.6	1587
	Total Romania	**64449.7**	891.2	37200	652.8	34581

Based on the National Forest Inventory (NFI) in Romania the average standing volume for beech is 416 m³/hectare. The average annual increment is 8.9 m³ per hectare (source http://roifn.ro/site/rezultate-ifn-2/)

A general overview of all the forest works in 2020 and 2021 in the buffer zone is presented below.

Table 3: Overview of the forest operations per type of operation in 2020 and 2021.

Crt. No.	Forest intervention type	Intervention area in 2020 (ha)	Harvested volume in 2020 (m3)	Intervention area in 2021 (ha)	Harvested volume in 2021 (m3)
1	Tending	65.1	0	101.1	0
2	Thinning	113.2	3606	106.6	2014
3	Phyto-sanitary cuttings	84.4	422	24.7	107
4	Salvation cuttings	105.3	1533	18.5	1005
5	Conservation cuttings	311.7	7298	195.8	8632
6	Group selection cuttings 1	37.2	3015	49.8	5131
7	Group selection cuttings 2	159.2	18178	71.2	7304
8	Final group selection cuttings	7.1	1401	48.9	8986
9	Shelter-wood cutting	8.0	1747	36.2	1402
	Total Romania	891.2	37200	652.8	34581

The definitions used in the table are in line with the definition of the guidance document as stated under chapter 4 definitions. The terms which are not defined in the guidance document are explained below.

Conservation cutting – the set of interventions, generally selective cutting or small group cuttings, applied in some stands of advanced age (> 120 years old), in order to maintain or improve their phytosanitary status, to ensure the permanence of the forest and to continuously improve the fulfillment of the protection functions. According to Romanian forestry technical instructions through this intervention is allowed to extract no more than 10% of the plot volume in 10 years.

Cheile Nerei-Beușnița

This area is part of the core zone of the eponymous National Park and covers a Natura 2000 area. In the buffer zone, forest exploitation is certified under FSC and managed according to a 10-year "forest management plan", harmonised with an "integrated management plan" adopted in 2016 for the whole park. The principle of zonation of the National Park has been explained in the report of Romania, joint world heritage centre/IUCN reactive monitoring mission. Strictly protected and protected zones have a no-intervention regime. In the restricted buffer zone (dark green zone) only conservation cutting is allowed.

Clear cutting

Clear cutting is not allowed.

Shelterwood cutting

Uniform shelterwood cuttings are not allowed.

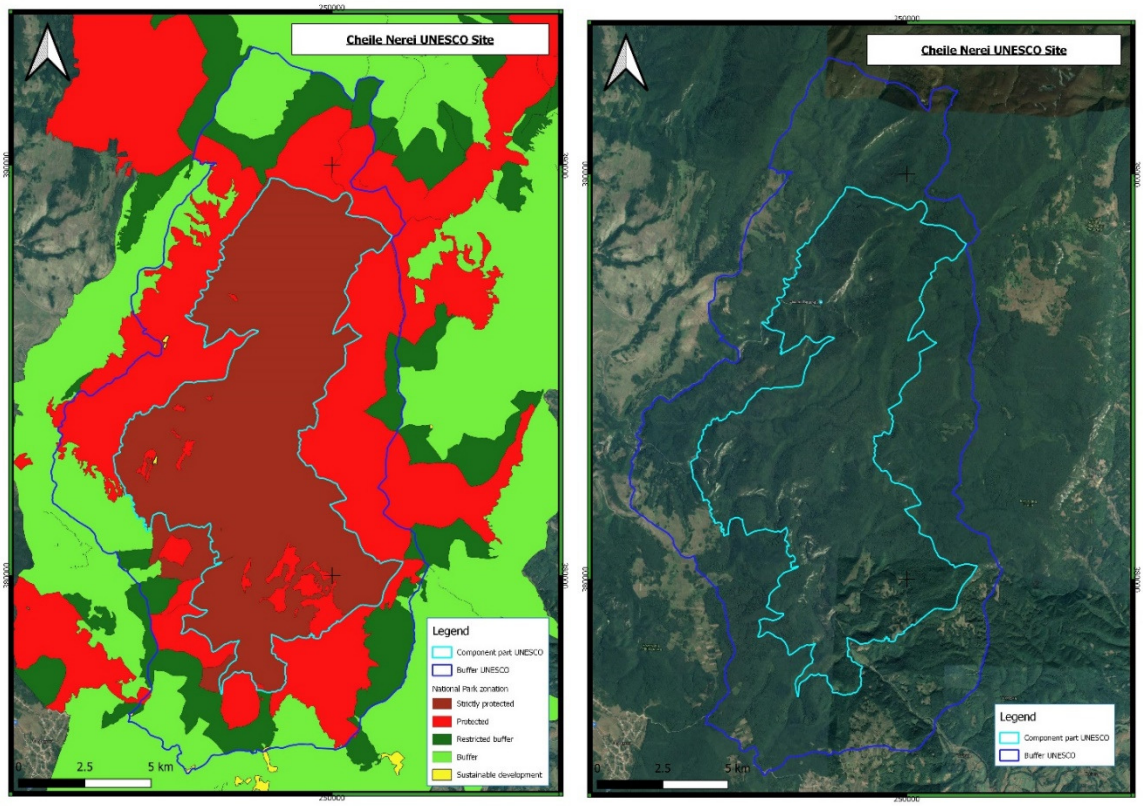
The tables below indicate the forest management interventions in 2020 and 2021 in the buffer zone and the distance from the intervention to the border of the component.

Table 4: Forest interventions in UNESCO buffer zone Cheile Nerei-Beușnița *in 2020*

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Conservation cuttings	10.5	385	2020	12.0	2.0
Conservation cuttings	25.0	765	2020	9.8	1.3
Thinning	15.3	490	2020	13.0	1.2
Thinning	4.1	70	2020	15.1	1.4
Group Selection cutting 1	12.0	1250	2020	12.0	1.4
	66.9	**2960**		**11.5**	

Table 5: Forest interventions in UNESCO buffer zone Cheile Nerei-Beușnița in 2021

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Group Selection cutting 1	7,4	693	2021	23,4	1,3
Conservation cuttings	41,1	1402	2021	11,6	0,7
Thinning	30,8	587	2021	9,6	0,7
Group Selection cutting 1	12,0	1070	2021	8,0	1,8
	91,3	**3752**		**10,9**	



Map 8: Zonation plan Cheile Nerei

Codrul Secular Șinca

Clear cutting

Clear cutting is not allowed.

Shelterwood cutting

Uniform shelterwood cuttings are not allowed.

In 2020 no interventions took place.

Forest interventions in the UNESCO natural site buffer zone in 2021 are shown in table 6.

Table 6: Forest interventions in UNESCO buffer zone Codrul Seculare Sinca in 2021

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Final Group Selection cutting	18,0	3738	2021	97,4	0,1
	18,0	**3738**		**97,4**	

Cozia

Clear cutting

Clear cutting is not allowed.

Shelterwood cutting

Uniform shelterwood cuttings are not allowed.

Forest interventions in the UNESCO natural site buffer zone in 2020 and 2021 are shown below.

Table 7: Forest interventions in UNESCO buffer zone Cozia in 2021

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Salvation harvest	4,6	6	2020	0,0	0,3
Salvation harvest	0,7	2	2020	0,1	0,3
	5,3	**8**		**0,1**	

Table 8: Forest interventions in UNESCO buffer zone Cozia in 2021

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Conservation cutting	32,5	1695	2021	12,2	0,9
Thinning	10,0	327	2021	8,2	1,6
	42,5	**2022**		**11,3**	

Domogled - Valea Cernei

This area comprises three separate clusters, all located within the core zone of the national park **Domogled Valea Cernei.** According to the zonation plan the forest is managed in the restricted buffer zone (dark green) and buffer zone (green). The strictly protected and protected zones have a no-intervention regime. Logging was undertaken in these specific zones in accordance with the national legislation 7 and the relevant forest management plans.

- In sectors of the buffer zone adjacent to the protection zones, in stands that reached the rotation age (100-120 years), the harvesting of trees, during the period of validity of the forest management plan (10 years), is limited to a maximum volume of 10% of the standing volume. In addition, logging is generally not implemented within 20 m from the component borders to preserve its integrity respectively:
- In the rest of the buffer zones where forestry interventions are allowed, **logging is carried out in accordance with the general exploitation rules applicable throughout the country, with some restrictions: only treatments with long regeneration periods can be applied, the clear-cuts being prohibited.**
- **In the report of the reactive monitoring mission it was clearly stated that forest exploitation is allowed and implemented within the buffer zones** of all Romanian listed components in accordance with national legislation and on the basis of 10-year forest management plans, as well as the integrated national management plans of the National Parks where they are located.

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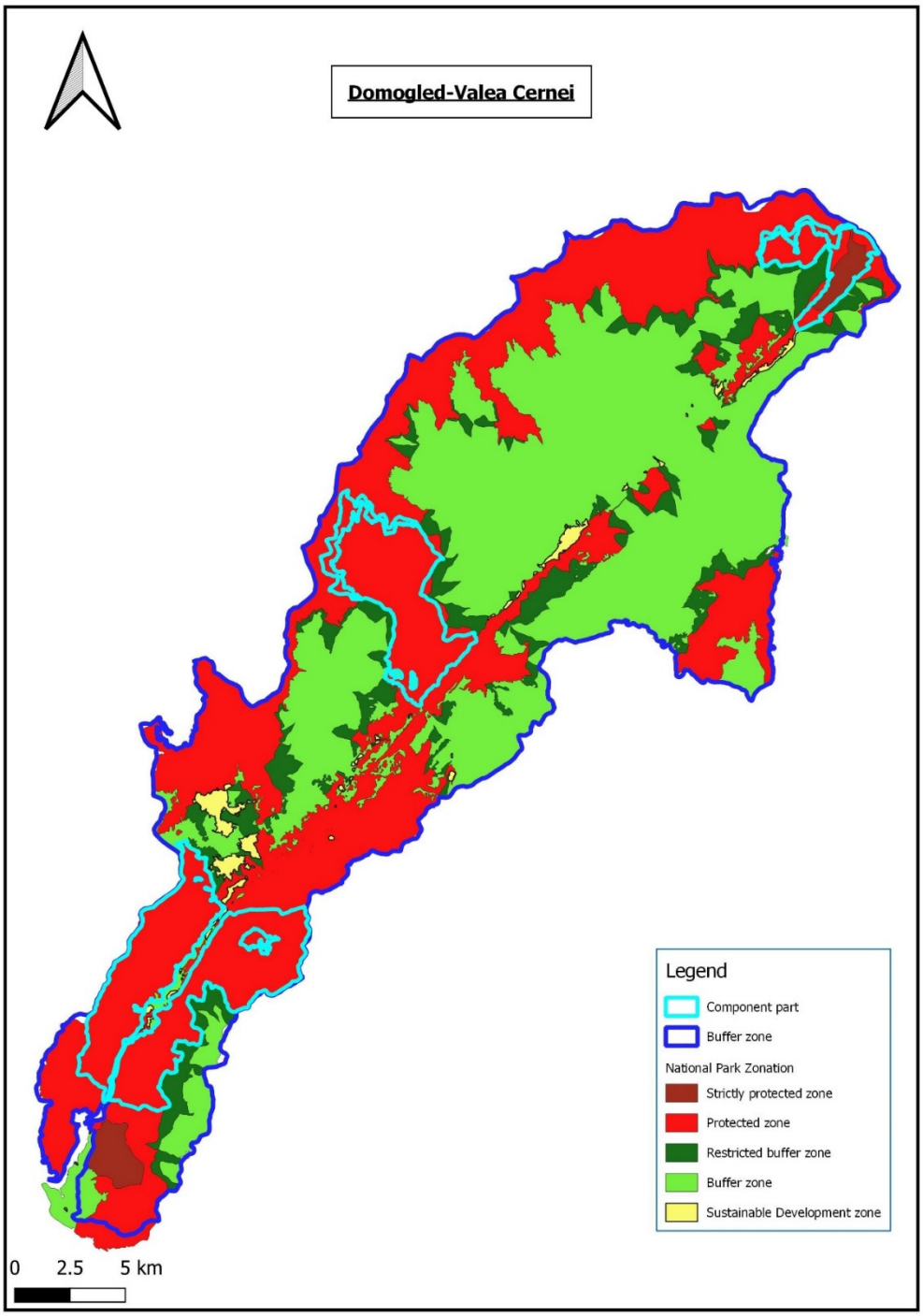

Map 9: Zonation plan Domogled - Valea Cernei National Park

Clear cutting

Clear cutting is not allowed.

Shelterwood cutting

Uniform shelterwood cuttings are not allowed.

Table 9: Forest interventions in UNESCO buffer zone Domogled-Valea Cernei in 2020

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Group Selection cutting 1	1,2	152	2020	30,0	5,9
Thinning	1,2	41	2020	10,0	5,9
Thinning	0,9	48	2020	12,8	5,6
Salvation harvest	22,2	51	2020	0,4	5,6
Salvation harvest	4,0	24	2020	1,1	3,8
Salvation harvest	2,0	11	2020	1,4	4,0
Salvation harvest	2,2	51	2020	4,5	4,4
Salvation harvest	0,1	2	2020	0,1	7,6
Salvation harvest	0,4	71	2020	1,4	7,6
Group Selection cutting 2	17,0	2425	2020	50,1	9,4
Group Selection cutting 2	17,5	3341	2020	51,7	9,6
Group Selection cutting 2	12,1	2093	2020	54,7	5,1
Conservation works	3,2	16	2020	10,7	4,1
Final Group Selection cutting	7,1	1401	2020	24,5	9,1
Thinning	17,0	351	2020	9,1	2,5
Thinning	2,5	100	2020	2,7	1,9
Group Selection cutting 2	11,0	1071	2020	12,9	0,1
Group Selection cutting 2	5,3	538	2020	17,3	0,6
Conservation works	15,7	924	2020	11,1	0,0
Tending	8,5	0	2020	0,0	0,1
Group Selection cutting 2	10,0	1610	2020	25,8	1,0
Group Selection cutting 1	5,0	488	2020	2,2	1,3
Tending	8,7	0	2020	0,0	2,6
Conservation works	10,5	413	2020	21,2	1,9
Tending	6,0	0	2020	0,0	1,7
Tending	17,2	0	2020	0,0	0,8
Thinning	9,5	470	2020	31,3	1,0
Conservation works	5,3	224	2020	13,6	0,9
Tending	6,4	0	2020	0,0	1,7
Tending	11,2	0	2020	0,0	2,3
Group Selection cutting 2	12,0	1152	2020	13,2	2,4
Group Selection cutting 2	22,3	810	2020	9,8	2,6
Group Selection cutting 2	8,1	1363	2020	38,4	0,5
Group Selection cutting 2	2,7	463	2020	35,6	0,6
Group Selection cutting 2	16,8	630	2020	8,0	0,7

Group Selection cutting 2	7,0	306	2020	3,6	1,4
Thinning	6,2	276	2020	27,0	9,4
Group Selection cutting 1	3,7	607	2020	28,2	9,4
Group Selection cutting 1	1,1	69	2020	13,0	8,0
Thinning	1,1	43	2020	21,2	7,1
Group Selection cutting 2	1,5	173	2020	46,6	9,2
Phyto-Sanitary cuts	33,7	262	2020	1,7	5,8
Conservation works	17,3	334	2020	6,4	0,3
Phyto-Sanitary cuts	11,2	55	2020	1,4	8,9
Phyto-Sanitary cuts	9,1	27	2020	1,8	8,9
Phyto-Sanitary cuts	2,6	10	2020	1,1	8,9
Phyto-Sanitary cuts	5,3	22	2020	1,2	9,4
Phyto-Sanitary cuts	0,8	3	2020	1,7	9,4
Phyto-Sanitary cuts	21,7	43	2020	0,5	6,4
Group Selection cutting 1	5,8	209	2020	5,3	7,1
Conservation works	5,4	195	2020	9,9	7,1
Thinning	1,0	22	2020	5,8	8,1
Thinning	4,0	66	2020	2,1	7,9
Thinning	3,9	229	2020	29,9	6,9
Thinning	2,1	101	2020	24,5	7,9
Salvation harvest	10,5	248	2020	11,0	7,6
Salvation harvest	0,1	51	2020	0,8	7,9
Conservation works	2,9	20	2020	6,5	7,7
Conservation works	4,0	19	2020	0,7	7,6
Conservation works	2,8	40	2020	2,6	9,2
Conservation works	9,8	58	2020	1,6	8,2
Conservation works	9,3	30	2020	1,1	8,1
Conservation works	2,1	38	2020	7,8	9,3
Conservation works	3,3	27	2020	2,8	8,3
Conservation works	7,0	241	2020	10,4	8,5
Conservation works	8,7	46	2020	3,3	9,0
Conservation works	3,5	18	2020	1,6	9,5
Conservation works	6,0	32	2020	1,3	9,8
Conservation works	8,4	18	2020	1,4	10,3
Salvation harvest	5,0	230	2020	1,9	5,2
Conservation works	2,2	32	2020	1,8	7,0
Group Selection cutting 1	8,4	240	2020	7,8	8,2
Conservation works	4,0	37	2020	2,2	8,3
Conservation works	50,1	1672	2020	8,2	10,3
Conservation works	1,0	2	2020	0,1	10,0
Conservation works	3,2	16	2020	1,5	8,1

Thinning	11,8	270	2020	2,2	10,3
Conservation works	4,5	20	2020	1,1	7,3
Conservation works	3,1	7	2020	0,9	10,0
Conservation works	16,1	45	2020	0,8	9,0
Conservation works	1,4	7	2020	2,8	9,2
Conservation works	16,1	44	2020	0,9	9,0
Conservation works	8,1	20	2020	0,8	4,7
Thinning	17,6	590	2020	6,9	9,6
Salvation harvest	0,1	7	2020	0,1	7,1
Conservation works	16,7	67	2020	0,9	7,5
Conservation works	6,5	20	2020	0,6	6,8
Conservation works	4,5	20	2020	1,6	6,4
Conservation works	4,5	20	2020	0,8	5,1
Group Selection cutting 2	9,9	1208	2020	35,1	5,8
Salvation harvest	4,0	511	2020	24,5	10,3
Group Selection cutting 2	6,0	995	2020	23,4	6,2
	730,5	**30352**		**8,8**	

Table 10: Forest interventions in UNESCO buffer zone Domogled-Valea Cernei in 2021

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Group Selection cutting 1	10,2	430	2021	11,4	4,3
Final Group Selection cutting	8,0	1181	2021	17,8	3,4
Tending	6,0	0	2021	0,0	3,8
Final Group Selection cutting	10,0	1879	2021	96,4	3,5
Group Selection cutting 2	4,1	428	2021	7,6	0,6
Group Selection cutting 1	13,0	1713	2021	7,6	1,3
Final Group Selection cutting	12,0	2000	2021	23,6	1,4
Group Selection cutting 2	10,0	2023	2021	14,9	2,2
Conservation works	9,0	447	2021	3,8	2,3
Conservation works	4,4	162	2021	10,0	2,5
Conservation works	5,0	103	2021	1,5	2,0
Conservation works	9,5	374	2021	16,9	2,3
Thinning	22,8	323	2021	11,8	0,3
Thinning	21,7	192	2021	9,2	0,1
Conservation works	5,5	211	2021	1,8	0,1
Tending	20,0	0	2021	0,0	0,2
Conservation works	5,0	691	2021	17,7	1,5
Group Selection cutting 2	2,5	150	2021	7,9	0,6

Group Selection cutting 2	7,0	749	2021	9,0	2,6
Group Selection cutting 2	2,9	456	2021	12,9	0,5
Final Group Selection cutting	0,9	188	2021	85,1	0,3
Group Selection cutting 2	9,7	1615	2021	51,0	0,2
Tending	24,8	0	2021	0,0	0,2
Group Selection cutting 2	6,0	163	2021	4,6	0,9
Group Selection cutting 2	10,0	368	2021	4,7	0,6
Group Selection cutting 2	7,0	491	2021	16,7	1,3
Group Selection cutting 2	7,0	429	2021	5,1	1,4
Thinning	6,7	161	2021	12,1	9,8
Thinning	9,0	236	2021	14,1	8,4
Thinning	3,6	113	2021	16,9	8,4
Thinning	2,0	75	2021	20,5	7,8
Group Selection cutting 1	1,6	239	2021	15,6	7,4
Conservation works	1,8	25	2021	3,3	5,3
Conservation works	0,4	24	2021	3,1	5,3
Group Selection cutting 2	5,0	432	2021	25,8	0,1
Group Selection cutting 1	2,6	319	2021	6,2	0,5
Group Selection cutting 1	3,0	667	2021	8,7	0,7
Conservation works	1,5	46	2021	3,8	5,1
Salvation harvest	3,0	15	2021	1,6	5,9
Phyto-Sanitary cuts	9,1	40	2021	1,0	9,0
Phyto-Sanitary cuts	5,3	20	2021	1,1	9,0
Phyto-Sanitary cuts	0,8	7	2021	4,0	9,0
Phyto-Sanitary cuts	9,5	40	2021	2,1	9,0
Conservation works	4,3	20	2021	0,5	7,8
Conservation works	2,9	20	2021	1,6	9,8
Conservation works	10,0	20	2021	0,8	10,0
Conservation works	3,2	16	2021	5,6	9,8
Conservation works	7,0	35	2021	0,8	8,2
Conservation works	8,1	20	2021	0,8	4,7
	354,3	**19356**		**10,0**	

Grosii Țibleșului

Clear cutting

Clear cutting is not allowed.

Shelterwood cutting

Uniform shelterwood cuttings are allowed by actual forest management plan but will be phased out. Interventions are made only in plots where this kind of works begun in the past, before the nomination and is not possible to change.

Table 10: Forest interventions in UNESCO buffer zone Grosii Țibleșului in 2020

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Final Shelterwood cutting	8,0	1747	2020	49,7	0,7
	8,0	**1747**		**49,7**	

Table 11: Forest interventions in UNESCO buffer zone Grosii Țibleșului in 2021

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Tending	3,7	0	2021	0,0	0,1
Conservation works	6,6	310	2021	8,9	0,2
	10,3	**310**		**8,6**	

Izvoarele Nerei

Clear cutting

Clear cutting is not allowed.

Shelterwood cutting

Uniform shelterwood cuttings are not allowed.

Table 11: Forest interventions in UNESCO buffer zone Izvoarele Nerei in 2020

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Conservation works	9,0	1426	2020	19,4	0,1
	9,0	**1426**		**19,4**	

Table 12: Forest interventions in UNESCO buffer zone Izvoarele Nerei in 2021

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Salvation harvest	15,5	990	2021	18,0	0,8
Conservation works	15,7	317	2021	5,6	0,1
Conservation works	16,6	2509	2021	13,3	0,3
	47,8	**3816**		**12,7**	

Strâmbu Băiuț

Clear cutting

Clear cutting is not allowed.

Shelterwood cutting

Uniform shelterwood cuttings are allowed by actual forest management plan but will be phased out. Interventions are made only in plots where this kind of works begun in the past, before the nomination and is not possible to change.

Table 13: Forest interventions in UNESCO buffer zone Strâmbu Băiuț in 2020

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Thinning	15,0	439	2020	10,9	0,3
Salvation harvest	49,5	268	2020	1,3	0,6
Tending	7,1	0	2020	0,0	0,3
	71,6	**707**		**2,8**	

Table 14: Forest interventions in UNESCO buffer zone Strâmbu Băiuț in 2021

intervention type	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)
Shelterwood cutting 2	36,2	1402	2021	13,2	0,6
Conservation works	5,7	185	2021	7,4	0,8
Tending	24,1	0	2021	0,0	0,3
Tending	22,6	0	2021	0,0	0,5
	88,6	**1587**		**11,7**	

Maps

Cfr: Overview of the management regime of the buffer zones and the management operations in the Ancient and Primeval Beech Forest of the Carpathians and other Regions of Europe, report of Romania, joint world heritage centre/IUCN reactive monitoring mission, 13/11-18/11/2019

5.2 Ukraine

In total, Ukraine has 15 component parts of the UNESCO World Natural Heritage Site "Ancient and Primeval Beech forests of the Carpathians and other regions of Europe", which are protected within the Carpathian Biosphere Reserve, Gorgany and Roztochya Nature Reserves, National Nature Parks – Uzhanskyi, “Synevyr”, “Zacharovanyi Krai” and "Podilski Tovtry".
Thus, the Heritage Site in Ukraine is protected within three types of protected areas: Nature reserves, biosphere reserves and National Nature parks (= National Park).

5.4.1 Management in the property

No intervention in the property is allowed.

5.2.1 Management in the buffer zone

Nature reserves according to IUCN classification belong to category Ia, where any economic activity is prohibited at the legislative level (Law of Ukraine "On Nature Reserve Fund of Ukraine").
Therefore, any logging in the buffer zones of the WHS component parts here is impossible.

Biosphere reserves and National Nature Parks, in contrast to Nature Reserves, have a functional zoning and are divided into three main zones. For biosphere reserves these are: protected (core) zone, buffer zone and zone of anthropogenic landscapes, and for parks – protected (core), regulated recreation and economic zones.
The regime of protected (core) zones of these two types of protected areas is similar to a nature reserve.
In other functional zones, some limited use of natural resources is provided by current laws and regulations, in particular by the Law of Ukraine "On Nature Reserve Fund of Ukraine" and the Sanitary Rules in the Forests of Ukraine.

In addition, the buffer zones of the Ukrainian component parts of the Heritage Site, with some exceptions, are protected within those functional zones where the continuous sanitary felling is not allowed by law. Here we mean the buffer zones of biosphere reserves and zones of regulated recreation of national nature parks.

However, in recent years there have been important changes in Ukrainian nature protection legislation, which were primarily aimed at conservation of primeval and old-growth (ancient) forests (Forest Code of Ukraine), as well as improvement of the conditions for conservation of natural complexes in protected areas (Laws of Ukraine "On Nature Reserve Fund of Ukraine", "On environmental impact assessment" and Sanitary rules in the forests of Ukraine).
As a result of these innovations, **any industrial logging (felling)** (in Ukrainian terminology logging (felling) of the main use), including continuous felling (clear cutting), within all types of protected areas was **prohibited.**
Previously, they were practised in the economic functional zones of national nature parks.

Significantly **limited continuous-sanitary loggings** used to take place on the territories of biosphere reserves and national nature parks. Presently, they can be carried out **only within the economic zones** of national nature parks and zones of anthropogenic landscapes of biosphere reserves **only in case of accidents and natural disasters** (Law of Ukraine "On Nature Reserve Fund of Ukraine", Sanitary Rules in Forests of Ukraine).

At the same time, in order to carry out continuous sanitary felling in protected areas, in accordance with the Law of Ukraine "On Environmental Impact Assessment", **it is necessary to conduct an environmental impact assessment**, **which makes it practically impossible to carry out such felling**.
The fact is that environmental impact assessment is not for free and means a very complicated bureaucratic procedure.
Due to this, **since the adoption of the corresponding law in 2017**, the administrations of Ukrainian protected areas, in particular those where component parts of the Heritage Site are protected, **have not carried out any sanitary felling at all in the buffer zones of the components**.

The Uzhanskyi protected area is exclusively a national nature park. The component part Stuzhytsia-Uzhok itself is located within the park's core zone, where any economic activity is prohibited, and the Buffer Zone of the Heritage Site is located within the zone of regulated recreation.

Map10: map of Stuzhytsia-Uzhok component part.

Summary

Considering the above, as well as the fact that all Ukrainian component parts and their buffer zones are located within the protected areas, there are currently no threats of carrying out any continuous felling (clear cutting or shelterwood cutting). The only legal instrument in the context of forest use in protected areas is selective-sanitary logging. They can also be implemented in the buffer zones of the component parts of the Heritage Site. Usually these loggings are carried out in limited areas and are not major interventions.

Below are excerpts from the current environmental legislation of Ukraine, which relate to the changes mentioned above. (Cfr annex 1)

5. Summary

The table below shows an overview of the actual management practices based on the definitions and information provided. This table is an update of table 2 in this document.

Table 15: Overview permissible operations in the buffer zones of the component's parts. AsA: Allowed on specific areas, AsP: Allowed with special permission, GA: Generally allowed, AsAsC: Allowed on specific areas and special conditions –light demanding and non-native species.

State Party	Cluster/Component	Group fellings < 0,5 ha	Clear cuts > 0,5 ha	Group Shelterwood cuttings < 0,5 ha	Shelterwood cuttings > 0,5 ha	Comment
DE	Grumsin	AsA	No	No	No	Group felling is limited to 0.3 ha
ES	Hayedos de Ayllón – Castilla La Mancha	No	No	No	No	Thinning in pine stands that will be transformed to beech
ES	Hayedos de Ayllón - Madrid	No	No	No	No	Thinning in pine stands that will be transformed to beech
ES	Hayedos de Navarra	AsAsC *	AsAsC *	AsP	AsP	Shelterwood in beech forests, 100 m from the border of component. Clear cuts in pine to transform to beech stand
ES	Hayedos de Picos de Europa	No	No	No	No	Firewood by local community through thinning
IT	Abruzzo, Lazio & Molise NP	No	No	No	No	
IT	Monte Raschio	No	No	No	No	Thinning in pine stands that will be transformed to beech
IT	Sasso Fratino	No	No	AsP	AsP	Sanitary and salvation cutting possible
RO	Cheile Nerei-Beușnița	No	No	GA	No	
RO	Cozia	No	No	GA	No	
RO	Domogled - Valea Cernei	No	No	GA	No	
RO	Groșii Țibleșului	No	No	GA	GA	Allowed but will be phased out in new managing plan
RO	Izvoarele Nerei	No	No	GA	No	
RO	Strâmbu Băiuț	No	No	GA	GA	Allowed but will be phased out in new managing plan
UA	Uzhanski NNPk	No	No	No	No	

6. Annexes

Annex 1 Legislation in Ukraine

Law of Ukraine

About amendments to some laws of Ukraine concerning prohibition of continuous fellings (clear-cutting) on mountain slopes in fir-beech forests of the Carpathian region

(Vidomosti Verkhovnoi Rady (VVR), 2019, № 51, p.383)

The Verkhovna Rada (Supreme Council) of Ukraine resolves:

I. To make changes to the following laws of Ukraine:

1. In the Law of Ukraine "On the nature-reserve fund of Ukraine":

1) the fifth paragraph of the first part of Article 21 about the economic zones of national nature parks after the words "within its boundaries" to supplement with the words "fellings of the main use are prohibited and".

2) part one of Article 26 on reserves after the word "prohibited" to supplement with the words "fellings of the main use".

Law of Ukraine

On amendments to some legislative acts of Ukraine on the protection of primeval forests in accordance with the Framework Convention on the Protection and Sustainable Development of the Carpathians

(Vidomosti Verkhovnoi Rady (VVR), 2017, № 37, p.379)

The Verkhovna Rada (Supreme Council) of Ukraine **resolves:**

I. To make changes to the following laws of Ukraine:

1. In the Forest Code of Ukraine (Vidomosti Verkhovnoi Rady, 2006, № 21, p. 170)

1) supplement with the Article 39^{-1} with the following content:

"Article 39^{-1}. Protection and conservation of primeval forests, quasi-primeval forests, natural forests

Primeval forests, quasi-primeval forests and natural forests are the national natural heritage of Ukraine.

In order to protect and conserve primeval forests, quasi-primeval forests and natural forests, all types of logging are prohibited there, including sanitary felling, felling of forest formation and sanitation (except for maintaining of linear objects and cutting of individual trees during firefighting), construction of buildings, laying roads, linear and other objects of transport and communication, cattle

grazing, industrial harvesting of non-timber forest products, passage of vehicles (except for public roads and forest protection services).

2) Article 70 shall be supplemented with part ten of the following content:

"In primeval forests, quasi-primeval forests, natural forests, is prohibited timber harvesting, all types of felling (logging), including the formation and sanitation of forests, and the removal of clutter".

Cabinet of Ministers of Ukraine

Decree

dated December 9, 2020, № 1224, Kyiv

On amendments to some decrees of the Cabinet of Ministers of Ukraine

1. In the Sanitary Rules in the Forests of Ukraine, approved by the Decree of the Cabinet of Ministers of Ukraine of July 27, 1995, № 555 (ZP of Ukraine, 1995, № 10, p. 253; Official Newsletter of Ukraine, 2016, № 87, p. 2839):

1) in paragraph 5:

the fifteenth paragraph shall be worded as follows:

"In the protected (core) zones of biosphere reserves, national nature and regional landscape parks, on the territory of nature reserves, monuments of nature, primeval forest nature monuments, including in conservation zones with the width of at least twice of the height of the primeval forest stand, which are established around primeval forest nature monuments, in primeval forests, quasi-primeval forests, natural forests and protected arrays, is prohibited to conduct sanitary fellings of all kinds, felling of hollow, dry, faut trees and elimination removal of clutter.";

2) paragraph 27 shall be worded as follows:

Within the economic zones of national nature parks and regional landscape parks and zones of anthropogenic landscapes of biosphere reserves, continuous sanitary felling is carried out only in the event of accidents and natural disasters.

All continuous sanitary fellings on the area over 1 hectare; all continuous sanitary fellings on the territories and objects of the nature reserve fund are carried out in accordance with the Law of Ukraine "On Environmental Impact Assessment.".

Law of Ukraine
On environmental impact assessment

Article 3. Scope of environmental impact assessment

1. The environmental impact assessment is mandatory in the decision-making process on the planned activities specified in parts two and three of this article. Such planned activities are subject to environmental impact assessment before a decision is made to carry out the planned activities.

2. The first category of types of planned activities and objects, that may have a significant impact on the environment and are subject to an environmental impact assessment includes:

21) all continuous and gradual fellings of the main use (clear-cutting) and continuous sanitary fellings on the area over 1 hectare; all continuous sanitary fellings on the territories and objects of the nature reserve fund.

Annex 2 Information from Italia

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Parco Nazionale Foreste Casentinesi Monte Falterona e Campigna

Subject: **Management of the buffer zone of the component Sasso Fratino (ID 034) - UNESCO site n. 1133ter "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe"**

The undersigned dott. Carlo Pedrazzoli, responsible for the management of the Italian component Sasso Fratino (ID 034) of the UNESCO site n. 1133ter "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe", declares that since the date of inscription to the World Heritage List (July 2017) the buffer zone of the component has been managed as follows:

The only interventions carried out were located in the area of property of the Tuscan region. These interventions were foreseen by the existing Management Plan of that Complex, carried out by the Union of Municipalities of the Casentino for the period 2008 - 2017, so even for a short period after the nomination of the UNESCO site. The effective application of the Plan was approximately 360 ha, or 5% of the buffer area (6940 ha). The type of interventions refers to cuts aimed at supporting the ongoing evolutionary processes, such as thinning of forests of different types.

For the remaining portion of the buffer area (Emilia-Romagna and the State Property), there are no significant interventions except for punctual phytosanitary operations and the recovery of crashed plants following particular meteoric events.

23/10/2019

Dr. Carlo Pedrazzoli

Annex 3: Forest interventions in UNESCO natural site buffer zone in 2020 and 2021

Forest interventions in UNESCO natural site buffer zone in year 2020

no.	component name	forest district	production unit	forest plot	area (ha)	standing volume (m3)	intervention tipe	interventi on area (ha)	harvested volume (m3)	interventi on year	proportion of harvested volume	distance to component (km)	ownership	remarks
1	Cheile Nerei-Beușnița	Sasca Montană	II	81A	10,5	3219	Conservation works	10,5	385	2020	12,0	2,0	State	
2	Cheile Nerei-Beușnița	Sasca Montană	II	82A	25,0	7801	Conservation works	25,0	765	2020	9,8	1,3	State	
3	Cheile Nerei-Beușnița	Sasca Montană	IV	24B	15,3	3767	Thinning	15,3	490	2020	13,0	1,2	State	
4	Cheile Nerei-Beușnița	Sasca Montană	IV	28C	4,1	463	Thinning	4,1	70	2020	15,1	1,4	State	
5	Cheile Nerei-Beușnița	Sasca Montană	IV	43A	30,3	10442	Group Selection cutting 1	12,0	1250	2020	12,0	1,4	State	
total Cheile Nerei - Beușnița buffer zone - year 2020					**85,2**	**25692**		**66,9**	**2960**		**11,5**			
6	Cozia	CALIMANESTI	IV LOTRISOR	32A	40,5	13715	Salvation harvest	4,6	6	2020	0,0	0,3	State	
7	Cozia	CALIMANESTI	IV LOTRISOR	32C	4,6	1601	Salvation harvest	0,7	2	2020	0,1	0,3	State	
total Cozia - Lotrișor buffer zone - year 2020					**45,1**	**15316**		**5,3**	**8**		**0,1**			
8	Domogled-Valea Cernei cluster	BAIA DE ARAMA	I Carpinei (X)	88A	1,2	507	Group Selection cutting 1	1,2	152	2020	30,0	5,9	Private	
9	Domogled-Valea Cernei cluster	BAIA DE ARAMA	I Carpinei (X)	88B	1,2	412	Thinning	1,2	41	2020	10,0	5,9	Private	
10	Domogled-Valea Cernei cluster	BAIA DE ARAMA	I Carpinei (X)	89A	0,9	376	Thinning	0,9	48	2020	12,8	5,6	Private	
11	Domogled-Valea Cernei cluster	BAIA DE ARAMA	I Carpinei (X)	89B	23,1	12498	Salvation harvest	22,2	51	2020	0,4	5,6	Private	
12	Domogled-Valea Cernei cluster	BAIA DE ARAMA	I Obârșia Cloșani (VIII)	240A	4,0	2212	Salvation harvest	4,0	24	2020	1,1	3,8	Private	
13	Domogled-Valea Cernei cluster	BAIA DE ARAMA	I Obârșia Cloșani (VIII)	240B	2,0	800	Salvation harvest	2,0	11	2020	1,4	4,0	Private	
14	Domogled-Valea Cernei cluster	BAIA DE ARAMA	I Obârșia Cloșani (VIII)	278A	2,2	1143	Salvation harvest	2,2	51	2020	4,5	4,4	Private	
15	Domogled-Valea Cernei cluster	BAIA DE ARAMA	IX	12B	9,4	3055	Salvation harvest	0,1	2	2020	0,1	7,6	State	
16	Domogled-Valea Cernei cluster	BAIA DE ARAMA	IX	12G	15,8	5049	Salvation harvest	0,4	71	2020	1,4	7,6	State	
17	Domogled-Valea Cernei cluster	BAIA DE ARAMA	IX	49H	17,0	4843	Group Selection cutting 2	17,0	2425	2020	50,1	9,4	State	
18	Domogled-Valea Cernei cluster	BAIA DE ARAMA	IX	55C	17,5	6468	Group Selection cutting 2	17,5	3341	2020	51,7	9,6	State	
19	Domogled-Valea Cernei cluster	BAIA DE ARAMA	VIII	154A	12,1	3824	Group Selection cutting 2	12,1	2093	2020	54,7	5,1	State	
20	Domogled-Valea Cernei cluster	BAIA DE ARAMA	VIII	289A	3,2	150	Conservation works	3,2	16	2020	10,7	4,1	Private	
21	Domogled-Valea Cernei cluster	BAIA DE ARAMA	X	2A	19,3	5722	Final Group Selection cutting	7,1	1401	2020	24,5	9,1	State	76% regeneration
22	Domogled-Valea Cernei cluster	BĂILE HERCULANE	IV	102B	28,2	3861	Thinning	17,0	351	2020	9,1	2,5	State	
23	Domogled-Valea Cernei cluster	BĂILE HERCULANE	IV	104A	25,8	3667	Thinning	2,5	100	2020	2,7	1,9	State	
24	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	84	26,3	8284	Group Selection cutting 2	11,0	1071	2020	12,9	0,1	State	
25	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	103B	9,3	3110	Group Selection cutting 2	5,3	538	2020	17,3	0,6	State	
26	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	107A	25,6	8355	Conservation works	15,7	924	2020	11,1	0,0	State	
27	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	156A	14,2	866	Tending	8,5	0	2020	0,0	0,1	State	
28	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	157B	20,4	6248	Group Selection cutting 2	10,0	1610	2020	25,8	1,0	State	
29	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	160B	46,9	22591	Group Selection cutting 1	5,0	488	2020	2,2	1,3	State	
30	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	17C	14,5	57	Tending	8,7	0	2020	0,0	2,6	State	
31	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	22A	10,5	1951	Conservation works	10,5	413	2020	21,2	1,9	State	
32	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	27B	12,0	829	Tending	6,0	0	2020	0,0	1,7	State	
33	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	36A,B	28,6	2223	Tending	17,2	0	2020	0,0	0,8	State	
34	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	5B	9,5	1503	Thinning	9,5	470	2020	31,3	1,0	State	
35	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	83A	5,3	1652	Conservation works	5,3	224	2020	13,6	0,9	State	
36	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	87C	10,7	623	Tending	6,4	0	2020	0,0	1,7	State	
37	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	92C	16,0	1102	Tending	11,2	0	2020	0,0	2,3	State	
38	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	103B	24,8	8744	Group Selection cutting 2	12,0	1152	2020	13,2	2,4	State	
39	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	104B	22,3	8303	Group Selection cutting 2	22,3	810	2020	9,8	2,6	State	
40	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	29B	10,9	3547	Group Selection cutting 2	8,1	1363	2020	38,4	0,5	State	
41	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	45B	3,1	1299	Group Selection cutting 2	2,7	463	2020	35,6	0,6	State	
42	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	92A	26,8	7858	Group Selection cutting 2	16,8	630	2020	8,0	0,7	State	
43	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	99A	23,7	8476	Group Selection cutting 2	7,0	306	2020	3,6	1,4	State	
44	Domogled-Valea Cernei cluster	BRÂNCUȘI	I CORLAN	32C	6,2	1024	Thinning	6,2	276	2020	27,0	9,4	Private	
45	Domogled-Valea Cernei cluster	BRÂNCUȘI	I CORLAN	33D	3,7	2150	Group Selection cutting 1	3,7	607	2020	28,2	9,4	Private	
46	Domogled-Valea Cernei cluster	BRÂNCUȘI	I CORLAN	41B	1,1	530	Group Selection cutting 1	1,1	69	2020	13,0	8,0	Private	
47	Domogled-Valea Cernei cluster	BRÂNCUȘI	I CORLAN	48C	1,1	203	Thinning	1,1	43	2020	21,2	7,1	Private	
48	Domogled-Valea Cernei cluster	BRÂNCUȘI	I CORLAN	33A	2,3	371	Group Selection cutting 2	1,5	173	2020	46,6	9,2	Private	
49	Domogled-Valea Cernei cluster	BRÂNCUȘI	I PADES	90A	33,7	15097	Phyto-Sanitary cuts	33,7	262	2020	1,7	5,8	Private	
50	Domogled-Valea Cernei cluster	BRÂNCUȘI	XI CERNISOARA	96D	17,3	5230	Conservation works	17,3	334	2020	6,4	0,3	Private	
51	Domogled-Valea Cernei cluster	CLĂBUCET	I AP MOTRI PADES	18 A	11,2	4021	Phyto-Sanitary cuts	11,2	55	2020	1,4	8,9	Private	
52	Domogled-Valea Cernei cluster	CLĂBUCET	I AP MOTRI PADES	18 B	9,1	1538	Phyto-Sanitary cuts	9,1	27	2020	1,8	8,9	Private	
53	Domogled-Valea Cernei cluster	CLĂBUCET	I AP MOTRI PADES	18 C	2,6	923	Phyto-Sanitary cuts	2,6	10	2020	1,1	8,9	Private	
54	Domogled-Valea Cernei cluster	CLĂBUCET	I AP MOTRI PADES	19 A	5,3	1845	Phyto-Sanitary cuts	5,3	22	2020	1,2	9,4	Private	
55	Domogled-Valea Cernei cluster	CLĂBUCET	I AP MOTRI PADES	19 C	0,8	174	Phyto-Sanitary cuts	0,8	3	2020	1,7	9,4	Private	
56	Domogled-Valea Cernei cluster	CLĂBUCET	I BORDINC	116 A	21,7	8137	Phyto-Sanitary cuts	21,7	43	2020	0,5	6,4	Private	
57	Domogled-Valea Cernei cluster	JIUL	IX Balmesul	15A	10,8	3909	Group Selection cutting 1	5,8	209	2020	5,3	7,1	Private	
58	Domogled-Valea Cernei cluster	JIUL	IX Balmesul	15C	5,4	1976	Conservation works	5,4	195	2020	9,9	7,1	Private	
59	Domogled-Valea Cernei cluster	JIUL	IX Balmesul	17 I	1,2	378	Thinning	1,0	22	2020	5,8	8,1	Private	
60	Domogled-Valea Cernei cluster	JIUL	IX Balmesul	18B	15,0	3090	Thinning	4,0	66	2020	2,1	7,9	Private	
61	Domogled-Valea Cernei cluster	PADEȘ	I Closani	41A	3,9	765	Thinning	3,9	229	2020	29,9	6,9	Private	
62	Domogled-Valea Cernei cluster	PADEȘ	I Closani	41D	2,1	413	Thinning	2,1	101	2020	24,5	7,9	Private	
63	Domogled-Valea Cernei cluster	PADEȘ	I Closani	42B	15,0	2247	Salvation harvest	10,5	248	2020	11,0	7,6	Private	
64	Domogled-Valea Cernei cluster	PADEȘ	I Closani	44B	28,9	6300	Salvation harvest	0,1	51	2020	0,8	7,9	Private	
65	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	122	2,9	309	Conservation works	2,9	20	2020	6,5	7,7	Private	
66	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	127	7,1	2656	Conservation works	4,0	19	2020	0,7	7,6	Private	
67	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	165	5,3	1526	Conservation works	2,8	40	2020	2,6	9,2	Private	
68	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	167	9,8	3584	Conservation works	9,8	58	2020	1,6	8,2	Private	
69	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	169	9,3	2669	Conservation works	9,3	30	2020	1,1	8,1	Private	
70	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	170	2,1	489	Conservation works	2,1	38	2020	7,8	9,3	Private	
71	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	171	3,3	974	Conservation works	3,3	27	2020	2,8	8,3	Private	
72	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	172	7,0	2317	Conservation works	7,0	241	2020	10,4	8,5	Private	
73	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	173	9,3	1410	Conservation works	8,7	46	2020	3,3	9,0	Private	
74	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	174	3,5	1117	Conservation works	3,5	18	2020	1,6	9,5	Private	
75	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	175	7,1	2435	Conservation works	6,0	32	2020	1,3	9,8	Private	
76	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	182	8,4	1287	Conservation works	8,4	18	2020	1,4	10,3	State	
77	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	106A	35,3	12143	Salvation harvest	5,0	230	2020	1,9	5,2	State	
78	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	121 A	6,7	1802	Conservation works	2,2	32	2020	1,8	7,0	Private	
79	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	129A	8,4	3077	Group Selection cutting 1	8,4	240	2020	7,8	8,2	State	
80	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	168A	6,0	1664	Conservation works	4,0	37	2020	2,2	8,3	Private	
81	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	181A	50,1	20291	Conservation works	50,1	1672	2020	8,2	10,3	State	
82	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	183A	12,9	2480	Conservation works	1,0	2	2020	0,1	10,0	Private	
83	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	17	3,2	1040	Conservation works	3,2	16	2020	1,5	8,1	Private	
84	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	27	54,3	12048	Thinning	11,8	270	2020	2,2	10,3	State	
85	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	50	4,5	1790	Conservation works	4,5	20	2020	1,1	7,3	Private	
86	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	13B	3,1	794	Conservation works	3,1	7	2020	0,9	10,0	Private	
87	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	16B	16,1	5328	Conservation works	16,1	45	2020	0,8	9,0	Private	
88	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	16D	1,4	251	Conservation works	1,4	7	2020	2,8	9,2	Private	
89	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	18A	16,1	5126	Conservation works	16,1	44	2020	0,9	9,0	Private	
90	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	222B	8,1	2569	Conservation works	8,1	20	2020	0,8	4,7	Private	
91	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	30A	35,2	8518	Thinning	17,6	590	2020	6,9	9,6	State	
92	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	46A	36,4	8947	Salvation harvest	0,1	7	2020	0,1	7,1	State	
93	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	50A	19,9	7880	Conservation works	16,7	67	2020	0,9	7,5	Private	
94	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	52C	12,4	3391	Conservation works	6,5	20	2020	0,6	6,8	Private	
95	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	56B	5,0	1255	Conservation works	4,5	20	2020	1,6	6,4	Private	
96	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	57B	10,4	2378	Conservation works	4,5	20	2020	0,8	5,1	Private	
97	Domogled-Valea Cernei cluster	PADEȘ	III Mehedintu de Sub Munte	83	9,9	3440	Group Selection cutting 2	9,9	1208	2020	35,1	5,8	Private	
98	Domogled-Valea Cernei cluster	PADEȘ	III Mehedintu de Sub Munte	181A	4,0	2088	Salvation harvest	4,0	511	2020	24,5	10,3	Private	
99	Domogled-Valea Cernei cluster	PADEȘ	III Mehedintu de Sub Munte	85A	11,9	4251	Group Selection cutting 2	6,0	995	2020	23,4	6,2	Private	
total Domogled - Valea Cernei buffer zone - year 2020					**1.189,2**	**345853**		**730,5**	**30352**		**8,8**			
100	Grosii Țibleșului	Grosii Țiblesului	VI	99A	16,3	3516	Final Shelterwood cutting	8,0	1747	2020	49,7	0,7	State	
total Grosii Țibleșului buffer zone - year 2020					**16,3**	**3516**		**8,0**	**1747**		**49,7**			
101	Izvoarele Nerei	NERA	II	41A	25,0	7336	Conservation works	9,0	1426	2020	19,4	0,1	State	
total Izvoarele Nerei buffer zone - year 2020					**25,0**	**7336**		**9,0**	**1426**		**19,4**			
107	Strâmbu Băiuț	Strambu Băiuț	III	33A	16,7	4027	Thinning	15,0	439	2020	10,9	0,3	State	
108	Strâmbu Băiuț	Strambu Băiuț	IV	52	49,5	20777	Salvation harvest	49,5	268	2020	1,3	0,6	State	
109	Strâmbu Băiuț	Strambu Băiuț	IV	53B	7,1	35	Tending	7,1	0	2020	0,0	0,3	State	
total Strâmbu Băiuț buffer zone - year 2020					**73,3**	**24839**		**71,6**	**707**		**2,8**			
total year 2020					**1.434,1**	**422552**		**891,2**	**37200**		**8,8**			

Forest interventions in UNESCO natural site buffer zone in year 2021

no.	component name	forest district	production unit	forest plot	area (ha)	standing volume (m3)	intervention tipe	intervention area (ha)	harvested volume (m3)	intervention year	proportion of harvested volume	distance to component (km)	ownership	remarks
1	Cheile Nerei-Beușnița	Sasca Montană	I	41A	7,4	2964	Group Selection cutting 1	7,4	693	2021	23,4	1,3	State	
2	Cheile Nerei-Beușnița	Sasca Montană	IV	56	41,1	12086	Conservation works	41,1	1402	2021	11,6	0,7	State	
3	Cheile Nerei-Beușnița	Sasca Montană	IV	24A	30,8	6101	Thinning	30,8	587	2021	9,6	0,7	State	
4	Cheile Nerei-Beușnița	Sasca Montană	IV	42A	35,6	13326	Group Selection cutting 1	12,0	1070	2021	8,0	1,8	State	
total Cheile Nerei - Beușnița buffer zone - year 2021					**114,9**	**34477**		**91,3**	**3752**		**10,9**			
5	Codrul Secular Șinca	R.P.L. O.S. Pădurile Șincii R.A.	I Șinca	69C	19,2	3839	Final Group Selection cutting	18,0	3738	2021	97,4	0,1	Commune	75% regeneration
total Codrul Secular Șinca buffer zone - year 2021					**19,2**	**3839**		**18,0**	**3738**		**97,4**			
6	Cozia	CALIMANESTI	IV LOTRISOR	8	32,5	13845	Conservation works	32,5	1695	2021	12,2	0,9	State	
7	Cozia	CALIMANESTI	IV LOTRISOR	50C%	32,7	3987	Thinning	10,0	327	2021	8,2	1,6	State	
total Cozia - Lotrișor buffer zone- year 2021					**65,2**	**17832**		**42,5**	**2022**		**11,3**			
8	Domogled-Valea Cernei cluster	BĂILE HERCULANE	IV	51B	10,2	3762	Group Selection cutting 1	10,2	430	2021	11,4	4,3	State	
9	Domogled-Valea Cernei cluster	BĂILE HERCULANE	IV	83B	42,1	6652	Final Group Selection cutting	8,0	1181	2021	17,8	3,4	State	75% regeneration
10	Domogled-Valea Cernei cluster	BĂILE HERCULANE	IV	84A	18,2	91	Tending	6,0	0	2021	0,0	3,8	State	
11	Domogled-Valea Cernei cluster	BĂILE HERCULANE	IV	91A%	10,0	1950	Final Group Selection cutting	10,0	1879	2021	96,4	3,5	State	78% regeneration
12	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	156C	15,4	5628	Group Selection cutting 2	4,1	428	2021	7,6	0,6	State	
13	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	160B	46,9	22591	Group Selection cutting 1	13,0	1713	2021	7,6	1,3	State	
14	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	162A	34,1	8491	Final Group Selection cutting	12,0	2000	2021	23,6	1,4	State	70% regeneration
15	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	163A	43,9	13571	Group Selection cutting 2	10,0	2023	2021	14,9	2,2	State	
16	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	165G	34,0	11720	Conservation works	9,0	447	2021	3,8	2,3	State	
17	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	20A	4,4	1622	Conservation works	4,4	162	2021	10,0	2,5	State	
18	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	22B	19,0	6650	Conservation works	5,0	103	2021	1,5	2,0	State	
19	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	26B	9,5	2216	Conservation works	9,5	374	2021	16,9	2,3	State	
20	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	32A	23,8	2737	Thinning	22,8	323	2021	11,8	0,3	State	
21	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	35A	21,7	2086	Thinning	21,7	192	2021	9,2	0,1	State	
22	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	43B	26,3	11612	Conservation works	5,5	211	2021	1,8	0,1	State	
23	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	46A	70,7	875	Tending	20,0	0	2021	0,0	0,2	State	
24	Domogled-Valea Cernei cluster	BĂILE HERCULANE	V	97A	35,2	3906	Conservation works	5,0	691	2021	17,7	1,5	State	
25	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	5S	6,9	1899	Group Selection cutting 2	2,5	150	2021	7,9	0,6	State	
26	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	104B	22,3	8303	Group Selection cutting 2	7,0	749	2021	9,0	2,6	State	
27	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	29B	10,9	3547	Group Selection cutting 2	2,9	456	2021	12,9	0,5	State	
28	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	43A	0,9	221	Final Group Selection cutting	0,9	188	2021	85,1	0,3	State	93% regeneration
29	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	48A	9,7	3169	Group Selection cutting 2	9,7	1615	2021	51,0	0,2	State	
30	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	49A	25,9	382	Tending	24,8	0	2021	0,0	0,2	State	
31	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	73A	20,7	3537	Group Selection cutting 2	6,0	163	2021	4,6	0,9	State	
32	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	92A	26,8	7858	Group Selection cutting 2	10,0	368	2021	4,7	0,6	State	
33	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	95B	10,4	2942	Group Selection cutting 2	7,0	491	2021	16,7	1,3	State	
34	Domogled-Valea Cernei cluster	BĂILE HERCULANE	VI	99A	23,7	8476	Group Selection cutting 2	7,0	429	2021	5,1	1,4	State	
35	Domogled-Valea Cernei cluster	BRÂNCUȘI	UP I Corlan	31A	6,7	1327	Thinning	6,7	161	2021	12,1	9,8	Private	
36	Domogled-Valea Cernei cluster	BRÂNCUȘI	UP I Corlan	40A	9,0	1674	Thinning	9,0	236	2021	14,1	8,4	Private	
37	Domogled-Valea Cernei cluster	BRÂNCUȘI	UP I Corlan	40B	3,6	670	Thinning	3,6	113	2021	16,9	8,4	Private	
38	Domogled-Valea Cernei cluster	BRÂNCUȘI	UP I Corlan	41D	2,0	366	Thinning	2,0	75	2021	20,5	7,8	Private	
39	Domogled-Valea Cernei cluster	BRÂNCUȘI	UP I Corlan	44A	3,3	1531	Group Selection cutting 1	1,6	239	2021	15,6	7,4	Private	
40	Domogled-Valea Cernei cluster	BRÂNCUȘI	UP I Proprietari Privați Padeș	118F	1,8	767	Conservation works	1,8	25	2021	3,3	5,3	Private	
41	Domogled-Valea Cernei cluster	BRÂNCUȘI	UP I Proprietari Privați Padeș	118F	1,8	767	Conservation works	0,4	24	2021	3,1	5,3	Private	
42	Domogled-Valea Cernei cluster	BRÂNCUȘI	UP I Proprietari Privați Padeș	164A	8,0	1672	Group Selection cutting 2	5,0	432	2021	25,8	0,1	Private	
43	Domogled-Valea Cernei cluster	BRÂNCUȘI	UP I Proprietari Privați Padeș	166A	13,2	5175	Group Selection cutting 1	2,6	319	2021	6,2	0,5	Private	
44	Domogled-Valea Cernei cluster	BRÂNCUȘI	UP I Proprietari Privați Padeș	167A	16,6	7669	Group Selection cutting 1	3,0	667	2021	8,7	0,7	Private	
45	Domogled-Valea Cernei cluster	BRÂNCUȘI	UP I Proprietari Privați Padeș	95C	2,9	1215	Conservation works	1,5	46	2021	3,8	5,1	Private	
46	Domogled-Valea Cernei cluster	BRÂNCUȘI	UP X Ivanu - without FMP	119	3,0	950	Salvation harvest	3,0	15	2021	1,6	5,9	Private	
47	Domogled-Valea Cernei cluster	CLĂBUCET	I AP Motru Mare	18B	9,1	4021	Phyto-Sanitary cuts	9,1	40	2021	1,0	9,0	Private	
48	Domogled-Valea Cernei cluster	CLĂBUCET	I AP Motru Mare	19A	5,3	1845	Phyto-Sanitary cuts	5,3	20	2021	1,1	9,0	Private	
49	Domogled-Valea Cernei cluster	CLĂBUCET	I AP Motru Mare	19C	0,8	174	Phyto-Sanitary cuts	0,8	7	2021	4,0	9,0	Private	
50	Domogled-Valea Cernei cluster	CLĂBUCET	I AP Motru Mare	19F	9,5	1868	Phyto-Sanitary cuts	9,5	40	2021	2,1	9,0	Private	
51	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	167	12,0	4365	Conservation works	4,3	20	2021	0,5	7,8	Private	
52	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	182A	2,9	1287	Conservation works	2,9	20	2021	1,6	9,8	Private	
53	Domogled-Valea Cernei cluster	PADEȘ	I Motru Sec	183A	10,0	2480	Conservation works	10,0	20	2021	0,8	10,0	Private	
54	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	13B	3,2	288	Conservation works	3,2	16	2021	5,6	9,8	Private	
55	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	17A	7,0	4298	Conservation works	7,0	35	2021	0,8	8,2	Private	
56	Domogled-Valea Cernei cluster	PADEȘ	II Motru Mare	222A	8,1	2569	Conservation works	8,1	20	2021	0,8	4,7	Private	
total Domogled - Valea Cernei buffer zone - year 2021					**763,2**	**193472**		**354,3**	**19356**		**10,0**			
57	Grosii Țibleșului	Grosii Țibleșului	VI	118A	5,3	122	Tending	3,7	0	2021	0,0	0,1	State	
58	Grosii Țibleșului	Grosii Țibleșului	VI	118D	6,6	3465	Conservation works	6,6	310	2021	8,9	0,2	State	
total Grosii Țibleșului buffer zone - year 2021					**11,9**	**3587**		**10,3**	**310**		**8,6**			
59	Izvoarele Nerei	NERA	II	21	15,5	5504	Salvation harvest	15,5	990	2021	18,0	0,8	State	
60	Izvoarele Nerei	NERA	II	23A	15,7	5706	Conservation works	15,7	317	2021	5,6	0,1	State	
61	Izvoarele Nerei	NERA	III	4C	34,3	18825	Conservation works	16,6	2509	2021	13,3	0,3	State	
total Izvoarele Nerei buffer zone - year 2021					**65,5**	**30035**		**47,8**	**3816**		**12,7**			
62	Strâmbu Băiuț	Strambu Băiuț	III	67	36,2	10607	Shelterwood cutting 2	36,2	1402	2021	13,2	0,6	State	
63	Strâmbu Băiuț	Strambu Băiuț	III	51D	5,7	2511	Conservation works	5,7	185	2021	7,4	0,8	State	
64	Strâmbu Băiuț	Strambu Băiuț	IV	44A	24,1	241	Tending	24,1	0	2021	0,0	0,3	State	
65	Strâmbu Băiuț	Strambu Băiuț	IV	54A	22,6	204	Tending	22,6	0	2021	0,0	0,5	State	
total Strâmbu Băiuț buffer zone - year 2021					**88,6**	**13563**		**88,6**	**1587**		**11,7**			
total year 2021					**1.128,5**	**296805**		**652,8**	**34581**		**11,7**			