GUIDELINES INTERPRETATION OF EUROPEAN NATURE HERITAGE IN TOURISM

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List of abbreviations

EU	European Union
EuroNatur	European Nature Heritage Fund
GDP	Gross Domestic Product
IAU	International Astronomical Union
ICOMOS	International Council on Monuments and Sites
IDA	International Dark-Sky Association
INTERREG	EU interregional programmes
IUCN	International Union for Conservation of Nature and Natural Resources
NBTA	Natural Based Tourism Attractions
OVGA	Azores Volcanological and Geothermal Observatory
SDGs	Sustainable Development Goals of the United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNWTO	The World Tourism Organization
VR	Virtual reality
WAW	Wild Atlantic Way

Abbreviations of countries used in the e-book

A Austria

B Belgium

BG Bulgaria

CH Switzerland

CZ Czech Republic

D Germany

DK Denmark

ES Spain

F France

GB Great Britain

GR Greece

H Hungary

HR Croatia

I Italy

IR Ireland

LT Lithuania

NL Netherlands

PL Poland

PT Portugal

RO Romania

RU Russia

S Sweden

SK Slovak Republic

SLO Slovenia

For other country codes see:

https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Country_codes

Foreword

> Interpretation is “an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information" (Tilden, 1957).

At a time of greater challenges for the tourism sector, and at the same time when the protection and conservation of our natural environment is of critical importance, it is imperative that we understand and apply nature interpretation as a tool to promote sustainable and responsible tourism.

Nature interpretation in tourism offers a unique opportunity to engage travellers with the natural environment and foster their understanding and appreciation of nature while supporting the conservation and sustainability of the areas they visit. These guidelines provide a comprehensive collection of knowledge, theories, and good practices of nature interpretation in the context of tourism.

These are targeted at students, researchers, and professionals working in the field of sustainable tourism. It offers a variety of perspectives and approaches to using nature interpretation as a tool to promote responsible tourism. From developing interpretive programs to training guides and integrating local knowledge and culture, this guide provides a wealth of information and suggestions for successfully implementing nature interpretation in the tourism sector.

We would like to thank all the authors who contributed to these Guidelines. Their expertise and passion have helped to create a work that is both theoretically sound and practically applicable. We hope that these Guidelines will help raise awareness of the importance of nature interpretation in tourism and find new ways to make the tourism sector more sustainable and nature friendly.

This monograph is a result of the international project "Methodology of Interpretation of European Nature Heritage in Tourism" (MIENAT). The project creates an important platform for deepening the internationalization of university studies as well as for increasing the mobility potential of students and academics in the field of tourism. The aim of the project was to create didactic materials for the introduction of a new field of study dealing with the current issues of nature heritage interpretation in tourism. The Department of Tourism of the Faculty of International Relations at the Prague University of Economics and Business (VŠE) was the

leading partner and coordinator of the project. Partner universities were Universidad Europea de Madrid (Spain), "Alexandru Ioan Cuza" University of Iași (Romania), Burgenland University of Applied Sciences (Austria), Fachhochschule des Mittelstands (Germany), Vytautas Magnus University (Lithuania), Universidade do Porto (Portugal) and Munster Technological University (Ireland). The project was funded by the EU's Erasmus+ program and ran from 2020–2023.

We wish you an enjoyable read and hope that these Guidelines will provide you with new insights and inspiration to advance nature interpretation in the tourism sector and have a positive impact on the environment and local communities.

1. Nature Heritage of Europe – Introduction and Protection

1.1 Nature Heritage in Europe – Basic Classification of Nature Heritage

UNESCO (1972) distinguishes between **cultural** and **nature heritage**. Later, additional categories were added to reflect the numerous interactions ("mixed cultural and nature heritage" and "cultural landscapes"; see Figure 1; UNESCO, 2015; Sun, 2010; Wallach, 2005). What follows deals with nature heritage – starting with its definitions and classifications as well as the protection of nature heritage through EU initiatives and psychological approaches.

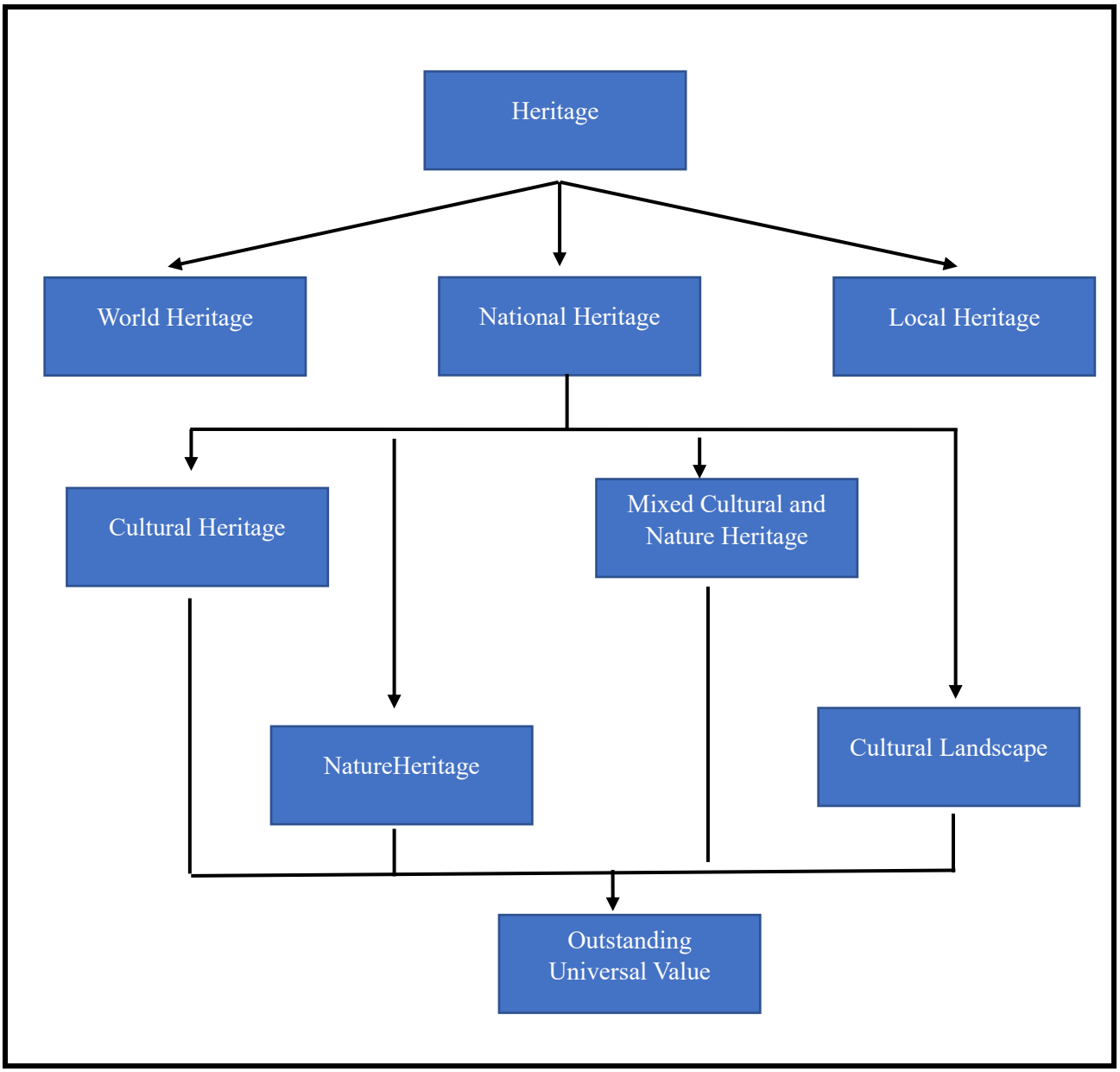


Figure 1. Classification of Heritage from Operational Guidelines (UNESCO, 2015; Idris et al., 2016, p. 3; Available via license: CC BY-SA 4.0)

1.2 Definition and Classification of Nature Heritage

> "Nature heritage refers to natural features, geological and physiographical formations and delineated areas that constitute the habitat of threatened species of animals and plants and natural sites of value from the point of view of science, conservation or natural beauty. It includes private and publicly protected natural areas, zoos, aquaria and botanical gardens, natural habitat, marine ecosystems, sanctuaries, reservoirs etc." (UNESCO Institute for Statistics, 2009).

The World Heritage Convention (Art. 2; UNESCO, 1972) divides nature heritage into three categories with some definitional ambiguities (cf. Figure 2):

"natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view;"	"geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation;"	"natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty."

Figure 2. Three categories of natural heritage according to the World Heritage Convention (Art. 2; UNESCO, 1972)

Each of the three categories must be related to science. Whereas the first and third categories also have an aesthetic value (i.e., natural beauty), the last two categories are also related to "conservation" (i.e. protection of animals; Hua, 2010). With regard to the classification and description of different categories of nature heritage, this approach remains unclear. According to Hua (2010), the following categories emerge (but even in this approach, numerous redundancies arise):

(1) Geological heritage (i.e., strata with ancient biological fossils)

(2) Biological heritage (i.e., habitat of animals and plants; including geological and physiographic formations)

(3) Topographical heritage (i.e., natural scenic spots)

UNESCO (2015) defines cultural landscapes as "cultural properties" which "represent the 'combined works of nature and of man' designated in Article 1 of the Convention. They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal" (p. 11).

In the context of this monography, the following forms of nature heritage are differentiated based on UNESCO (2015):

(1) Large-scale protected areas and national parks

(2) Hydrology and balneological resources

(3) Cultural landscape, palace gardens, zoos, and botanic gardens

(4) Geoparks, coastal landscape and inanimate nature

(5) Small-scale protected areas, regional parks, and nature reserves

(6) Island landscape, agricultural landscapes, and vineyards

(7) UNESCO locations

(8) Caves and extreme nature heritage

1.3 Challenges: SDGs and Protection of Nature Heritage in Europe

Conserving nature heritage is quite challenging, and The Policy Learning Platform (Environment and Resource efficiency) of Interreg Europe (2016) pointed out the following challenges for biodiversity and nature heritage protection:

- *Access to robust and reliable data:* Protection of nature heritage and biodiversity requires reliable data i.e. for the assessment of human impact.
- *Management of Natura 2000 network (cf. 1.3.1):* There is an evident need for investments, tools and innovative approaches.

- *Assessment of ecosystem services:* The assessment of ecosystem services and their values is recognized as a central precondition for strategic planning for biodiversity and nature heritage protection.
- *Knowledge gap:* Gaps in knowledge regarding ecosystems must be seen as a critical risk factor within protection of biodiversity and nature heritage.
- *Financing:* The allocation of sufficient funds for nature conservation at regional level remains a challenge (Interreg Europe, 2016).

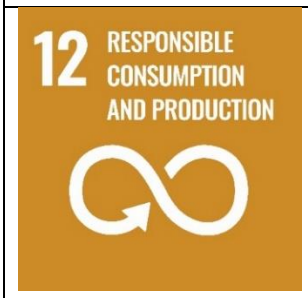
Fortunately, some of these challenges are addressed in the EU initiatives and EU projects presented below.

In 2015, the Member States of the United Nations adopted the 2030 Agenda for Sustainable Development (United Nations, 2021). Central to this agenda are the 17 "Sustainable Development Goals" (SDGs), which represent an urgent call for action by all countries – developed and developing – in a global partnership (cf. Figure 3).

Figure 3. SDGs (United Nations, 2021)

Many of these targets are used at national level as a framework for the implementation of nature heritage conservation measures. Within the framework of various goals, the protection of nature (including nature heritage) is addressed. These include (among others; cf. Table 1):

Table 1. Intersections of SDGs with natural heritage protection

Goal	Intersection with nature heritage protection
	One of the formulated aims is to intensify efforts to protect and preserve the world's cultural and nature heritage (Bundesvereinigung Nachhaltigkeit, 2021).
	One of the goals is to ensure that people everywhere have relevant information and awareness of sustainable development and a way of life in harmony with nature by 2030 (Bundesvereinigung Nachhaltigkeit, 2021)
	By 2030, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts (Bundesvereinigung Nachhaltigkeit, 2021)
	By 2030, ecosystem and biodiversity values are to be integrated into national and local planning, development processes, poverty reduction strategies and overall accounting systems, among other things (Bundesvereinigung Nachhaltigkeit, 2021). In Germany, for example, the areas of the “National Natural Heritage” contribute significantly to the conservation and development of biological diversity. They are former federally owned areas that were exempted from privatisation and instead transferred free of charge to the states, nature conservation organisations or foundations for permanent nature conservation (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 2021). In connection with nature heritage, the federal government itself takes over nature conservation tasks (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 2021).

1.4 EU Initiatives

EuroNatur Foundation

EuroNatur (European Natural Heritage Fund) was founded in Germany in 1987. The fund aims to promote the conservation of biodiversity in Europe as well as to protect endangered species and their habitats. Sustainable development (especially in the field of agriculture and tourism) is to be supported. Further objectives are: transboundary cooperation in ecological projects and environmental lobbying as well as the promotion of ecological awareness (UIA, 2021). The foundation directly addresses the SDGs 11, 12, 14 and 15.

Natura 2000 network

The Natura 2000 network covers about 27,000 sites, about one fifth of the EU's land area, and a large part of its marine waters (European Commission, 2018). It allows EU countries to cooperate within a common legal framework to protect threatened species and valuable natural habitats. The network covers different ecosystems, but also cultural heritage sites. Natura 2000 offers many opportunities for tourism and recreation in a healthy environment and involving related cultures and lifestyles. Of the 365 World Heritage sites in the EU, almost 20% are located in or directly bordering a Natura 2000 site (European Commission, 2018). The network addresses the SDGs 11, 12, 14 and 15.

Awareness-raising approaches for sustainability and nature heritage

As mentioned, projects and initiatives are irreplaceable components of nature heritage conservation. However, their impact will be limited if they do not also promote sustainable individual behaviour. Interpretive methods related to nature heritage are one way to promote sustainable behaviours. In this regard, approaches from psychology can be adapted.

Climate and environmental protection are frequently discussed topics, also at the political level and in the context of school education; however, there is often a gap between awareness and actual behaviour. There are certain conditions needed to lead us from an environmentally friendly attitude to environmentally conscious behaviour. With regard to the quality of the prediction (attitude → behaviour), the prognostic validity (or predictive validity) represents a central quality criterion. According to Dorsch (2021), this means that the result of a measured feature (here: attitude) should be correlated with an external criterion or characteristic (in this case: behaviour) that lies in the future in accordance with expectations or theory. Some possible

approaches from the field of psychology are outlined below. For a more in-depth insight into the topic, please consult the MIENAT handbook.

Social incentives

People have the need to compare and compete with others. We need to model the behaviour of others in order to develop a standard of comparison for our own behaviour. It is precisely in these situations that areas of the brain become active that are also linked to emotional centres and can thus also support behavioural changes (cf. Greve, 2018). The importance of social norms was made clear by the towel study (Goldstein, Cialdini & S Griskevicius, 2008), among others. In contrast to the appeals that are sometimes used to encourage guests to reuse their towels, Goldstein et al. (2008) found that the application of the reciprocity norm (cf. "WE'RE DOING OUR PART FOR THE ENVIRONMENT. CAN WE COUNT ON YOU?", Goldstein, Griskevicius & Cialdini, 2007, p. 147) and the descriptive norm (cf. "JOIN YOUR FELLOW GUESTS IN HELPING TO SAVE THE ENVIRONMENT. Almost 75% of guests who are asked to participate in our new resource savings program do help by using their towels more than once. You can join your fellow guests in this program to help save the environment by reusing your towels during your stay", Goldstein et al., 2007, p. 148). As well, "green" practices improved the participation of guests in a hotel's towel reuse program. These results can also be transferred to other areas of tourism in order to promote sustainable behaviour. If certain behaviours are to be encouraged, it is important to model the behaviours of others.

Immediate rewards

We value rewards that we receive immediately, more highly than rewards that we might receive at some point in the future. However, if we take a look at what happens if we reward people now for actions that have a positive long-term impact on sustainability, it becomes clear that feedback of demonstrated behaviours is essential to be able to register a rewarding effect of one's own behaviour (Seel, 2012). Through the repetition of these contingency plans, this registration is no longer necessary after a certain point, as habits or routines have developed (Dorsch, 2021).

Process monitoring

The brain processes positive information “more efficiently" than negative information (Bodenmüller, 2021). If we want to change behaviour in a sustainable way, positive consequences should be named (cf. Japanese Cool Biz campaign, which emphasises the benefits of casual work clothes and does not refer to the environmental impact of the use of air conditioning in the workplace; European Commission, 2014).

Further reading

- https://whc.unesco.org/en/natural-world-heritage/
- https://ec.europa.eu/environment/nature/natura2000/management/links_natural_cultural_heritage_en.htm

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2. Nature Heritage in Tourism

2.1 Nature-Based Tourism

Specialists' opinions are divided between defining nature-based tourism as a concept per se and using various of its complementary forms to describe it (cf. Luo & Deng, 2008): eco-tourism, sustainable tourism, adventure tourism, alternative tourism, outdoor activities, eco-travelling, etc. (cf. Jenkins & Pigram, 2003).

Nature tourism, also called nature-based tourism, can be defined as "the pleasure of enjoying natural areas and observing nature" (Lucas, 1984), or more elaborately as "tourism based on the natural attractions of an area. It consists of responsible travel to experience natural areas and their landscape, flora and fauna, protecting the environment and improving the quality of life of locals" (CBI, 2020).

Tourism New South Wales identifies four main categories in nature tourism, which are presented in Figure 4.

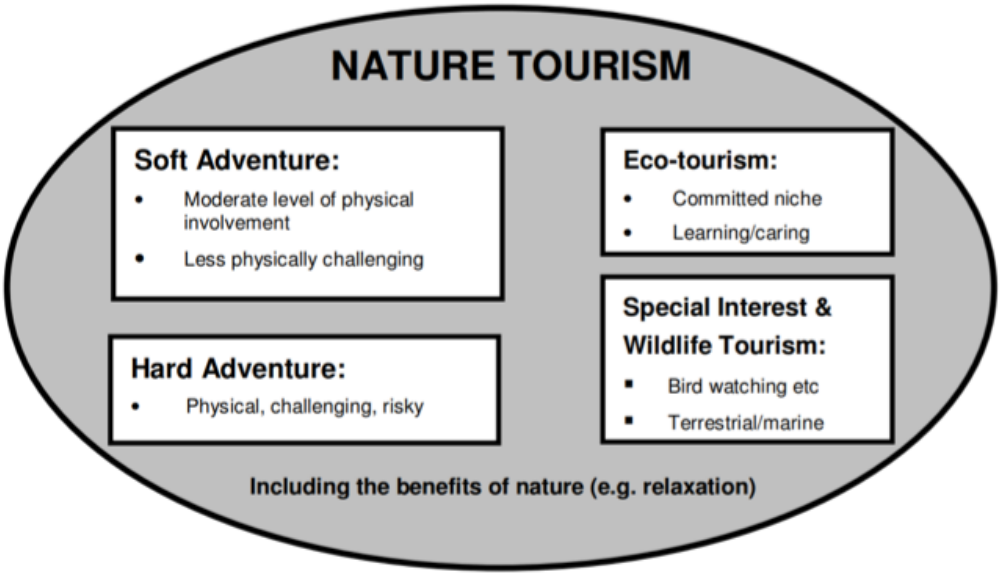

Figure 4. Four main categories in nature tourism (Tourism New South Wales, as cited in CBI, 2020)

The International Natural Based Tourism Attractions (NBTA) is a type of tourist activity combining three specific elements, i.e. education, leisure, and adventure. Valentine (1992) also includes the leisure component in his definition and states that NBTA is primarily concerned

with direct pleasure. The International Ecotourism Society (2019) shows that ecotourism involves interpretation and education which is meant to be inclusive of both staff and guests.

2.2 Nature-Based Tourism Demand

The demand for nature and ecotourism is high and will continue to grow. According to CBI (2020), nature and ecotourism are one of the main tourism segments, which also includes adventure tourism. The products and services in this segment come in many forms, including wilderness and dark sky tourism. Attracting tourists to remote areas may disrupt their remoteness but may also offer many opportunities if you adopt practises that care for and respect nature. Germany, France, the Netherlands, Belgium, Poland, and the Czech Republic have the biggest share of outbound trips with nature as the primary motive. These six countries are considered the most relevant nature and ecotourism markets in Europe, with Germany standing out (cf. table 2; CBI, 2020).

Table 2. Top European nature and ecotourism markets (Statista, Eurobarometer 432)

	Outbound overnight trips 2018, in millions	**Percentage of holidaymakers who see nature as a primary motive for choosing a holiday destination**	**Indication of number of outbound overnight trips with nature as a primary motive, in millions**
Germany	109.0	15%	16.35
France	53.3	14%	7.46
Netherlands	20.8	25%	5.20
Belgium	13.1	19%	2.49
Poland	12.0	19%	2.28
Czech Republic	7.4	26%	1.92

Tourism needs Nature. Spalding et al. (2021) notice that the importance of nature to the tourism industry is often underestimated due to an overly narrow view of its role in direct nature-based activities. These are only a part of the value of nature. Many tourists are drawn by the presence or the benefits of nature, without choosing to make specific visits to parks or to catch fish. Thus, Spalding et al. (2021) argue that tourism needs nature, and that it is critical to

develop a holistic valuation of "nature-dependent tourism", comprising all tourism that has some link to, and dependency on, nature and natural ecosystems.

Sensitivity and Nature tourism. Woyo (2021) argues that tourism is a sensitive industry, especially to disasters and crises. Domestic tourism is perceived to recover more quickly as a result of social or economic crisis, compared to international travel. However, for this to happen, there is a need to increase accessibility to domestic attractions. Woyo (2021) notes that future studies must also review pre-COVID and post-COVID challenges in promoting domestic tourism as this will provide the destination with an analytical framework that could help develop sustainable recovery and resilience building strategies of the industry.

Nature tourism and post-Covid world. In a post-Covid world, as Spalding et al. (2021) note, changes to travel and tourism are inevitable and will likely be driven by a combination of consumer choice, destination availability and regulatory change. While traveller numbers are likely to be strongly affected initially, natural values are likely to exert a stronger pull than previously, with travellers and tourists seeking to avoid crowds and polluted cities. Tourism expansion and growth have inflicted considerable damage on many parts of the natural world. However, a growing understanding of the importance of nature to many aspects of tourism has begun to alter this narrative. In the natural resources sector, as Liisa Tyrväinen, research professor from the Natural Resources Institute, Finland, (2020) notices, the coronavirus pandemic has had a significant short-term impact on nature-based tourism. International demand dropped considerably, and the increase in domestic demand could not fully compensate for lost sales. The recovery has been affected by restrictions on mobility and travel, as well as health management, that are particularly reflected in the opportunities and willingness of international travel. Therefore, the development of new business models is the key. Focus should be placed on the utilisation of domestic demand for nature-based tourism, exploiting the opportunities offered by virtual travel and other digital services, and the development of services customised for different target groups, such as remote working, social welfare, and healthcare sectors.

Truly holistic valuation of "nature-dependent tourism". According to Spalding et al. (2021), there is now an even greater need to develop a truly holistic valuation of "nature-dependent tourism", comprising all tourism that has some link to, and dependency on, nature and natural ecosystems. Sharma et al. (2021) point out that in the aftermath of COVID-19, the tourism industry is bound to be reorganised based on actual planning and not just paperwork. The

industry needs to be oriented toward education, environmental and social justice, and racial healing. Industry's service providers need to be encouraged to push a **new demand** by changing their unsustainable product offers. Thus, the possible increase in nature tourism demand can be seen in the following ways (see figure 5).

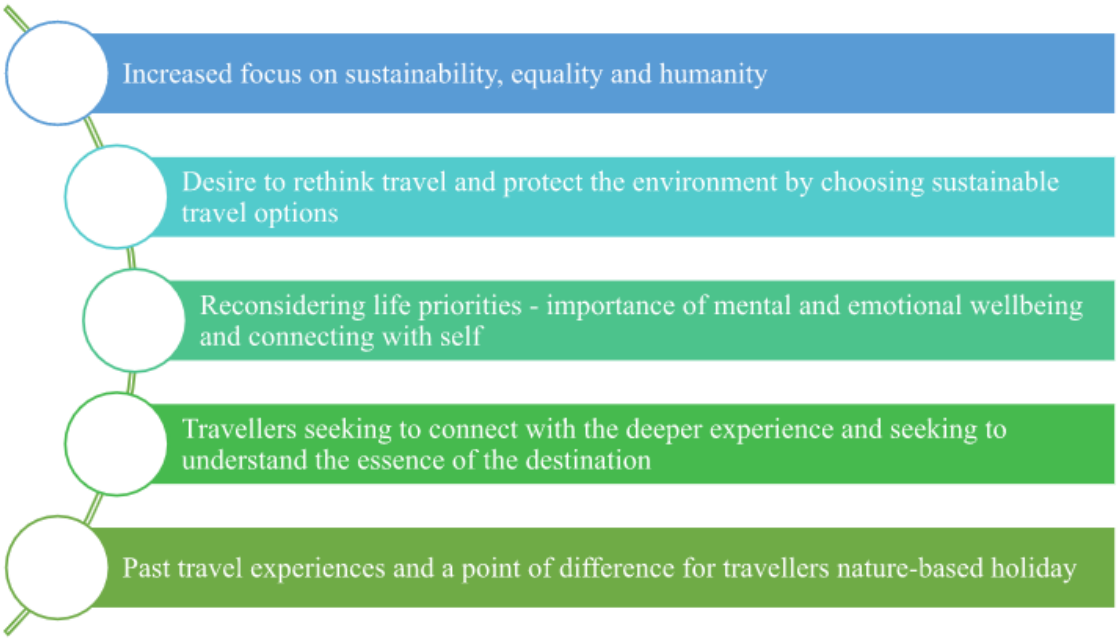

Figure 5. Suggested elements of increased demand on nature tourism (author elaboration)

2.3 The Economic Benefits of Nature-Based Tourism

Achieving sustainable tourism involves developing forms of tourism that preserve the natural environment and biodiversity, ensuring fair distribution of benefits. Local communities are encouraged to establish protected areas and attract tourists to capitalise on nature's beauty. Nature-based tourism brings economic, social, cultural, and natural benefits. **Social benefits** include improving living standards, access to education, and reducing migration. **Cultural benefits** include adopting a modern lifestyle, community belonging, and cultural development. The **environment benefits** from increased awareness and involvement, ensuring continuity of natural resources and a clean environment. **Economic benefit**s are particularly attractive to governments, communities, and businesses.

Nature-based tourism has provided a unique opportunity for poorer countries to boost their economies and improve the welfare of their communities. This form of tourism promotes social responsibility and contributes to sustainable development. The economic benefits are evident

in the growth of GDP and employment rates in the areas where tourism is developed. Tourists' spending on goods and services, such as accommodation, meals, entertainment, and insurance, generates revenue for local businesses. Additionally, taxes and excise duties collected by governmental authorities increase as a result of tourists' expenditures. This creates a multiplier effect, stimulating growth in related industries and benefiting employees in the tourism sector. Tourism creates jobs directly for employees in transportation, accommodation, meals, souvenirs, and other tourist services. Indirectly, it supports industries like agriculture, forestry, and equipment supply. Tourism also stimulates international trade, infrastructure development, and helps low-income economies (cf. Word Bank, 2017). For a more in-depth insight into the topic, please consult the MIENAT handbook.

2.4 Nature-Based Tourism Segmentation

Nature-based tourism has grown recently, but the appreciation of nature as a tourist attraction is not new. It dates back to the Romantic movement. Society's relationship with nature is changing due to environmental attitudes, education, and media. This new paradigm includes new values and beliefs about nature and aims for harmonious relations between society and the environment (cf. Albrecht et al., 1982).

As a result, new perceptions and demands on this natural space are produced, which, among other aspects, end up taking the form of new demands linked to tourism, recreation and education. Rhodes (2017) summarizes this change in tourist demands on nature in four main new motivations:

- the ***search for experiences in and through nature***,
- ***rest and relaxation in natural settings that are considered pleasurable***,
- the ***development of skills and abilities in nature***,
- ***health and fitness***.

Rhodes (2017) states that understanding nature-based tourism requires considering three relationships between visitors and the place they engage in tourism activities: in nature, on nature, and by nature. Activities must be based on experiences in, on, and by nature to qualify as nature tourism. However, motivations and relationships with nature vary, making research challenging. Vera's (1997) group of geographers differentiates groups based on motivations and relationships with nature:

- ***Naturalists and admirers of nature.*** They seek intimate contact with nature and tend to develop respectful behaviour, and whether or not they are researchers and/or professionals, they are very interested in the educational-training aspect of the trip.

- ***Adventurous mountaineers,*** who are looking for a challenge and a challenge in nature, with spaces for exploration and intense physical activity, either because of the climatic or orographic difficulty, the scarcity or non-existence of services, etc.

- ***Informed nature tourists,*** who are interested in the knowledge of the relief, water, flora, fauna and landscape. They tend to be very well documented about the areas they visit and their trips take place specifically in protected areas in order to understand the history, nature and local culture. However, they are also very likely to travel under highly organised management systems and with a certain level of comfort.

- ***Campers,*** who group together a wide spectrum of behaviours, and who may seek in nature only a space and a pleasant setting for their stay and as a framework for their activities that are not directly related to the qualitative component of the environment in which they are located. They tend to demand many comforts.

- ***Occasional nature tourists.*** People who participate in nature accidentally, as part of a wider trip, and who dedicate very little time to visiting the natural space. This is generally a group who are mainly looking for spectacular and well-known landscapes, almost what could be called naturalistic clichés, but only from an aesthetic point of view and largely as a form of personal self-recognition.

Generally speaking, the greater the degree of specialisation of the tourist, whether it is due to sport-tourism motivations that oblige them to seek out certain elements such as topography or water-courses, or due to their knowledge of nature, they will demand more specialised natural areas from the point of view of resources and adaptation to their interests. On the other hand, the more occasional and less informed nature tourist will be guided by less generic criteria, such as spectacularism, social recognition, accessibility or the quality and price of tourist products.

2.5 Overtourism in Natural Areas

Tourism's association with globalization and uneven distribution of benefits and costs poses problems. Overtourism is a concern for destinations needing to protect cultural and natural resources. Donaldson (2021) states that overtourism threatens ecosystems, even though small acts like straying from trails or driving off-road, impacting biodiversity.

Overtourism is a long-standing issue that has gained attention in recent years. The concept has been discussed in the media and academia, with terms like 'overtourism' and 'tourismphobia' making headlines. The idea of 'carrying capacity' was explored in the 1980s, and overtourism refers to when tourism exceeds capacity thresholds. It is different from mass tourism and is characterized by negative impacts on the environment and local communities. There have been debates about the desirability of further tourism growth in Europe.

Sustainable tourism is not a special form of tourism; all types of tourism should be more sustainable. This means controlling negative effects and integrating sustainability into industry planning. Responsible tourism is another term for sustainable tourism. Ecotourism aims to preserve the environment and benefit society but can have unintended negative consequences for wildlife conservation. *Although eco-tourism yields economic benefits, it can also have unintended negative consequences for the conservation of wildlife in protected areas. In broader discussion, on the one hand, the overtourism context influences and makes louder the voices of residents, while on the other hand the sustainable tourism context influences the right to travel, asking tourist voices to become more responsible for the locality* (Perkumiene et al., 2020, Pranskūnienė & Perkumienė, 2020).

Overtourism and sustainable tourism both pose challenges to the rights of residents and tourists, as well as the regulation and protection of public interests.

Overtourism is associated with the fact that the rights of travelers, who are tourists moving for entertainment and consumption purposes, are not equivalent to the residents' rights- residents and those people who have changed their place of residence. Thus, there is a need for balancing the right to travel and the residents' rights. Therefore, we should rethink our understanding of nature tourism using a distinctive approach to tourism development (Hall, 2010; Perkumiene & Pranskuniene, 2019) involving nature tourism development as well as community-based tourism, responsible tourism, slow tourism. Overtourism and sustainable tourism, as important contexts influence the changing meaning of the right to travel and the right to live. On the one

hand, the overtourism context influences and makes the voices of residents louder, while on the other hand the sustainable tourism context influences the right to travel, asking tourist actors to become more responsible for the locality. Both of these rights pose a serious threat, not only to conflicts between the right to travel and the right to reside, or between community autonomy and personal freedom, but also to the regulation and enforcement of locals' rights and the protection of the public interest and environment as well. Thus, when discussing the overtourism in nature areas, the right to travel could be understood more broadly, trying to add to the notion of residents – humans and ecological ecosystems (Figure 6).

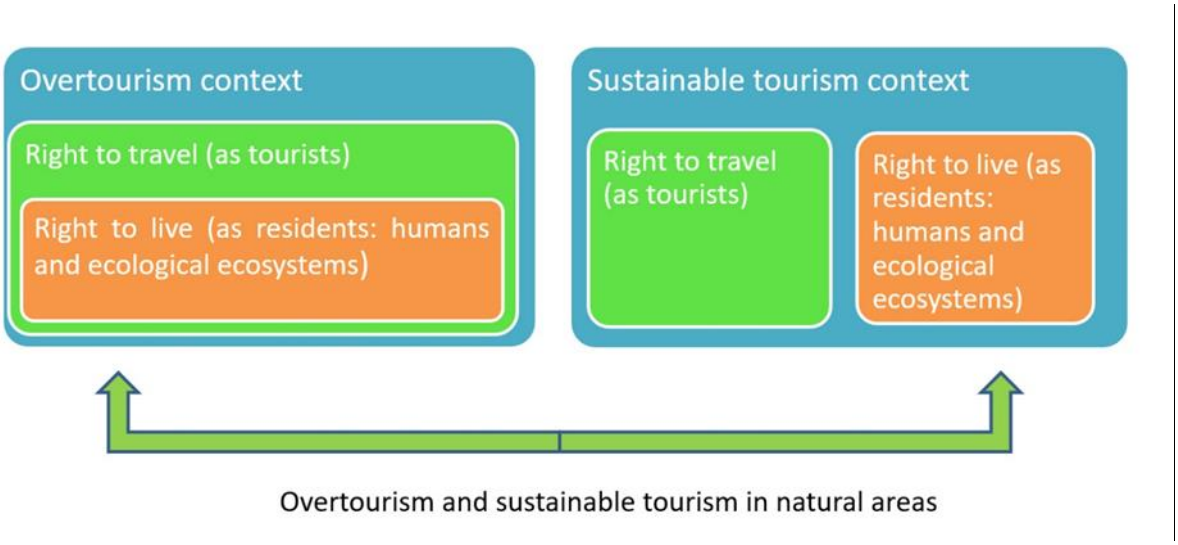

Figure 6. Overtourism and sustainable tourism in natural areas (Source: author elaboration)

The ongoing debate on overtourism is expected to boost demand for sustainable tourism, including nature and ecotourism with minimal impact on destinations. Increased public awareness is also pushing the travel industry to prioritize human rights and working conditions. The global growth of tourism will further fuel the discussion on overtourism and its management. Capocchi et al. (2019) highlight the paradox of sustainability in the tourism sector, calling for transformation to address the negative impact of overtourism. Mandić and Marković Vukadin (2021) emphasize the need for understanding complex ecosystems and non-linear cause-and-effect relationships in protected nature areas. They argue for change in management processes, including stakeholder involvement, goal-orientation, and monitoring. Reactive monitoring of policy measures is crucial for adaptive management and creating value for visitors.

2.6 Sustainability and the Limits of Acceptable Change in the Context of Nature Heritage in Tourism

The tourism sector is vital for many economies, but it can also have negative impacts on the environment and society. The effects vary depending on factors such as the number and type of tourists, as well as the characteristics of the destination (cf. Martínez Quintana, 2017). In the post-COVID era, recovery and future growth must prioritise quality and sustainability. Nature tourism and ecotourism are often associated with responsible travel, but it is important to consider potential negative impacts. Managing visitor flows requires awareness and regulatory measures to protect destinations without compromising the sector's long-term competitiveness.

To ensure sustainable tourism, impacts must be identified, measured, and managed. Negative environmental impacts affect pristine nature areas, cultivated land, and the biosphere. Proper risk management and contingency plans are necessary to address these issues. For a more in-depth insight into the topic, please consult the MIENAT handbook.

2.7 Tourism in Protected Areas

The International Union for Conservation of Nature (IUCN) defines a protected area as "a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley, 2013, p. 2).

Protected areas include national parks, as well as five other categories with different management objectives. These areas have ecological and cultural value and have evolved into leisure destinations. The number of protected areas is increasing worldwide, and tourism in these areas can contribute to international goals like the SDGs.

Benefits and impacts of tourism in protected areas

The demand for nature-based tourism has influenced the management and use of these resources. Tourism activities in natural settings can have both positive and negative impacts, such as threats to biodiversity and pollution. Many countries have implemented laws and conservation plans to minimize these impacts. However, tourism can also provide economic benefits, supporting biodiversity conservation and creating livelihoods for local communities.

Ecotourism activities involving local communities have generated economic opportunities. Interpretation and education activities can have a global impact. Appropriate management is crucial for the sustainability of protected areas.

The EU has nature protection legislation centered around the Natura 2000 Network, which consists of over 27,000 protected areas. In Spain, these areas cover 27% of the country's territory. The network aims to combine rural livelihoods with biodiversity preservation. The European Charter for Sustainable Tourism promotes sustainable practices in protected areas. By adhering to the charter, tourism entrepreneurs commit to initiatives that benefit the local economy and preserve natural resources. Balancing innovative tourism products with conservation values is crucial for the future.

COVID-19 impact in protected areas

The COVID-19 pandemic has had a negative impact on conservation efforts, leading to increased threats to natural ecosystems and a decline in jobs and income for communities. Travel restrictions reduced tourism, allowing some ecosystems and wildlife to recover temporarily. However, illegal wildlife trade and poaching activities have increased during the pandemic (Lehmann et al, 2021).

While some European countries have seen increased visitation to their protected areas, destinations in the Global South have suffered from limited domestic markets (UNWTO, 2022). Strategies to address conservation challenges and promote resilient tourism include supporting the nature-based tourism industry, diversifying the local economy, empowering communities, and transitioning to a less carbon-intensive sector (Lehmann et al, 2021).

Further Readings

- https://www.are.admin.ch/are/en/home/sustainable-development/international-cooperation/2030agenda/un-_-milestones-in-sustainable-development/1987--brundtland-report.html
- https://www.cbi.eu/market-information/tourism/nature-tourism/nature-eco-tourism/market-potential
- https://portals.iucn.org/library/sites/library/files/documents/PAG-021.pdf
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- https://www.europarc.org/wp-content/uploads/2015/05/2010-European-Charter-for-Sustainable-Tourism-in-Protected-Areas.pdf
- https://www.eea.europa.eu/data-and-maps/data/natura-11
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3. Specifics of Interpretation of Nature Heritage

3.1 Interpretation

These days there is a growing number of people who tend to spend their leisure time in peaceful nature rather than at overcrowded cultural tourist destinations. This trend gained in importance especially during the COVID-19 pandemic, when most tourist facilities in traditional tourist destinations were closed. The **growing popularity of outdoor activities** and particularly those undertaken by many visitors coming in small, unorganised groups represents a **serious threat to nature**. Without building an adequate infrastructure and setting adequate rules for the behaviour of visitors it is almost impossible to manage the current intensive flow of tourism and maintain it sustainably.

The most efficient way to guarantee the sustainable development of a destination is through **appropriate destination management, including planning and interpretation.** Interpretation refers to the methods of **communication used to educate and motivate visitors, and connect them with nature heritage sites.**

> Nature heritage interpretation is about telling people what is special about an area and encouraging them to behave in certain ways by providing them with certain information (*EUROPARC Consulting GmbH., 2012, p. 24*).

Modern interpretation of nature heritage relies very much on principles adopted almost seventy years ago by Freeman Tilden (1883–1980). In 1990, the Nordic Council of Ministers highlighted two aspects regarding nature interpretation (Swedish Centre for Nature Interpretation, SCNI, 2017):

- Knowledge transfer regarding nature
- Evoking of emotions for nature

3.2 Specifics in the Interpretation of Nature Heritage

The interpretation in natural environment is sometimes difficult and has many specifics given by the essence of natural environment itself. These specifics are reflected in the goal, content, methods, and ways of interpretation.

Aspects influencing the interpretation of natural monuments:

- Often the large size of specific geographical space
- Natural monuments and other attractions are vulnerable, nature protection is prioritized against opening it up to the public and interpretation.
- Nature phenomena are transient (e.g., vegetation period, time of nesting)
- in situ interpretation is not always feasible due to inaccessibility of the terrain and safety of visitors
- some monuments are intangible (inanimate nature)
- wild nature/behavior of animals, visibility and many atmospheric phenomena are unpredictable,
- some phenomena in nature are hidden, imperceptible, invisible (e.g. a slow development of geological processes)

It is important to adapt the ways of interpretation to these specifics.

In-situ interpretation of natural monuments often depends on the weather. Therefore, the interpretation must be flexibly adaptable to actual external conditions. Telescopes, magnifiers or other devices are used for interpretation of some items. Models or digital technologies are used in case of invisible phenomena e.g. in the universe. Making some attractions accessible for the public may require high initial and operational costs (e.g. visitor centers, watching towers, boardwalks).

Smaller groups of visitors are typical for trips in nature. Motivation of people visiting the natural attraction is also different from visitors to cultural monuments or events:

- Relax in nature
- Enjoyment of viewing landscapes
- Experiencing the nature atmosphere, seeking peace
- Possibility of socialisation through meetings with family and friends
- Photographing nature
- Sport, adventure
- Entertainment
- Spiritual values
- Interest in nature heritage
- Curiosity and education

According to their knowledge and interest, visitors can be divided into groups as follows:

1. Unaware visitors: no previous knowledge of the site; impressions are based predominately on the aesthetic appeal of the site.
2. Aware visitors: like the first group but has gained some knowledge of the site prior to the visit.
3. Interested visitor: they show interest in the educational aspect of the visit, but with no specific preference.
4. Nature scientists – amateurs
5. Nature scientists – specialists
6. Nature scientists – experts

It is advisable to prepare the interpretation at a different level for each of these groups. The interpretation should respond to the interest and preference of the visitors. It shouldn´t interfere with the experience of a stay in nature, it should enrich this experience. At the same time interpretation mustn't distort nature.

The main aim is to help visitors breathe in the beauty of the destination and become aware of its significance. This can vary from person to person, as it is the relationship created between people and places. For example, this might evoke:

- Emotions (e.g. significance of its history),
- Imagination (e.g. what the place looked like in the past),
- Stories (e.g. tales and folklore), and
- Personal experiences (e.g. sense of excitement or adventure).

Goals of interpretation

Nature interpretation requires a clear communication approach so that the nature phenomena is better understood. This will lead to a **better understanding** and **affinity to the places** and, therefore, greater emphasis on **protecting them**. The main aims of nature heritage interpretation are in the following table 3

Table 3

Main aims of nature heritage interpretation

Education	increasing knowledge learning experience
Experience	Positive emotional experience in nature.
Nature protection	To develop a for-preservation attitude
Behaviour	To affect participants' attitudes and behaviour
Sustainability	Motivation of participants' own reflections regarding sustainability
Tourism	To contribute to tourists' satisfaction, support for commercial sustainability of tourist operations
Safety	To secure safety for visitors during their movement in nature

Source: author´s own production

Content of interpretation

Apart from the basic information about the natural site/attraction and a wider context (nature, cultural, social, historical) of the whole site, there are many other topics. Comprehensive approach and context, and other connotations related to the local community and surrounding nature, are very important, e.g., personalities connected with the given natural phenomenon and sites such as utilization of water to curative procedures based on principles formulated by Kneipp and Priesnitz). Emphasis on the importance of the place as inspiration for works of art represents a link to cultural heritage.

There are also many hot topics connected with nature protection. Natural areas are usually confronted with many challenges, such as:

- Preservation of nature diversity and wild fauna.
- Sensitive use of nature resources.
- Danger caused by climatic changes.
- Danger of light pollution.

Climate change includes the actual changes in temperature, rainfall, and other weather variables. It can lead to a decrease in the number of visitors (Markham, et al., 2016) and interrupt the socio-economic activities at a cultural landscape area (Change, 2019). For example, climate change is projected to decrease the annual visit numbers of the Mesa Verde National Park in the USA, which attracts about 500,000 tourists yearly and contributes about US$ 47 million to the local economy (Holtz, et al., 2014).

It also has an impact on biodiversity: namely on the plants that live in seasonally changing environments and on the animals that migrate in a specific season of the year (Blackman, 2017). That is why timing is everything. Matching site visits with the best times of year for growth and reproduction are necessary to maintain a high and safe number of visitors to the nature attraction.

Tourism and visitors´ behavior often represent a considerable burden for nature. Education in this field with guidelines for sensitive behavior should become a part of interpretation too. This is not only about correct behavior in nature (movement only on marked trails, not being noisy, not cutting flowers, leaving litter, etc.), but also about sustainable responsibility during transport in the destination, and water consumption during the stay (e.g. encouraging visitors to economize on water with respect to the local conditions of a destination and its population). Tourism is a water demanding industry. Offering services to visitors has led to increased pressure on local and nature resources, including water. Tourism development has resulted in an increase in water consumption in the respective destinations. Tourism also means an increased risk of water pollution. Visitors should always remember that their presence and careless water consumption could result in water issues for the local population.

Infrastructure for nature interpretation

Nature interpretation requires adequate infrastructure. Its layout, type/purpose, and architecture need to correspond with the environment and atmosphere, not to disturb, but on the contrary to be harmoniously integrated with the landscape.

The infrastructure is often equipment demanding with high operational costs. Examples of specific infrastructure for nature interpretation include:

- Visitor centers in protected nature areas and their modifications like planetariums, observatories, houses of nature, thematic visitor centers

- Infrastructure in caves (safety, walkability, lightning)
- Outlook towers, sky walks, watch towers

Financially less demanding are heritage/educational trails with interpretation panels. Nevertheless, even this infrastructure needs careful content, design and technical preparation, and of course there are maintenance costs.

3.3 Trends in Nature Interpretation

Basic trends in the interpretation of nature heritage are as follows:

- Nature interpretation is enlarged as there are new sites, new topics, and is newly adapted to different segments of visitors.
- Change to the content of the information. There is a shift from scientific content of the message to a more contextual one, nature heritage is interpreted in the frame of a social, cultural, geographical, and historical context.
- The role of visual form of the interpretation (photography, film, schemes, graphs, models) is growing, the amount of textual information is falling.
- Attractive forms of interpretation can be used thanks to new infrastructure (sky walks, tree walks, watching towers, remarkable visitor centres), which extends the experience.
- Digital technologies are increasingly used in interpretation. They enable an increase in the range of topics and make interpretation accessible and more attractive to many segments of visitors. However, it needs to be respected, that not everybody wants to use a mobile phone and similar devices in nature.
- High emphasis on sustainability, both within the interpreted content and the way of interpretation. The visitor is invisible having been made familiar with practical processes of sustainable behaviour.
- Efficiency of interpretation is being increased by incorporation of interactive elements into the interpretation, with impact on emotions of visitors. Storytelling as a form of message is very popular, interpretation uses elements of gamification.
- Interpretation tries to encourage the use of all senses to increase the experience (smelling, touching, listening to sounds, watching, tasting…)

3.4 Risks of Interpretation

The danger of overinterpretation

Sometimes, excessive enthusiasm about places and phenomena leads to interpretation where it is not necessary, to instil meanings and explanations, which can lead to excessive rationalisation, losing enthusiasm and the ability to enchant (Bramwell and Lane, 2005). According to Moscardo, et al (2004), to be effective, heritage interpretation should be multisensorial, and the interpretative material should be easy to understand, creating personal connections.

Danger of elitism

Often, the guides themselves oppose mass tourism, preferring to engage with genuine nature enthusiasts. However, it is important to note that the aim of heritage interpretation is not only to inform about certain phenomena but also to train people in terms of behaviour and attitudes towards sustainability. Addressing only those who have already adopted this attitude would mean to give up an essential part of the interpretation.

Danger of intrusion

On the other hand, when talking about tourism massification, a discussion about intrusiveness seems unavoidable. Some researchers (Gartner, 1996) argue that it is necessary to protect local inhabitants and local culture from visitors' behaviour; others assume that everything is constantly changing and adapting. "It must also be remembered that most local communities were changing long before tourism, and their cultures may well be able to adapt to such new influences as the staging of events, and yet retain — and even reinforce — their vitality and coherence" (Bramwell and Lane, 2005, p. 24). Once again, interpretation plays a crucial role in protecting locals from damages and prejudice, adapting and absorbing the advantages of tourism while, at the same time, protecting places from turning into thematic parks.

Danger of creating 'quaint' tourist landscapes

Since the "unknown" is considered more probing and exotic, visitors tend to prefer what is different (Urry, 1990). So, there is the danger of exacerbating the aspects that are different, creating "quaint" tourist landscapes. "Fossilised relics, sterilised neat reconstructions, and aesthetic pretensions may be created for the entertainment rather than the enlightenment of the

visitor, and these are likely to discourage the expression of the local landscape of the time" (Bramwell and Lane, 2005, p. 25).

3.5 Methods Used in Nature Interpretation

A range of potential interpretation methods are available. Most common methods of nature interpretation are: nature path/trails, guided tours, excursions, audio guides, mobile applications, interpretative books, leaflets, educational materials, interpretative panels, shows and demonstrations, workshops, exhibitions, tastings, festivals, audio-visuals tools, and virtual reality /augmented reality. Complex interpretation is offered in interpretation centres. A specific tool for interpretation is observation towers and treetop walking paths, watching towers to watch animals and ships adapted to watch the sea life.

Methods of interpretation can be divided into personal and non-personal ones.

In the **personal (face-to-face) interpretation**, the interpreter meets a visitor directly. It can be a guided tour, show or workshop with an instructor, live history, etc. This form of interpretation is usually considered most effective. Personal interpretation enables the interpreter to respond flexibly to the needs and interests of visitors and immediate situation. However, it is highly demanding from the view of its organisation and qualification of interpreters.

Non-personal interpretation uses various tools and media, it is an opportunity for so-called self-guided tours. Helpful are printed materials, interpretative boards, audio-visual aids, digital media, projection in virtual reality. A visitor alone decides about the pace of the tour on the location, decides about the range and depth of information they will use. Advantage of non-personal interpretation is its almost unlimited availability (information can be received almost anytime and anywhere), possibility to offer a wide range of language versions, variability of the range and depth of displayed information.

Interpretation can be conducted **in situ** (at the authentic site) or **ex situ** (out of the nature location, e.g., outreach programmes, workshops at school).

Digital technologies have been widely used in nature heritage interpretation. Digital techniques provide diversified content formats like video, 3D simulation, multimedia, and various interaction systems such as voice interaction, touch-screen interaction, and gamified activities.

Virtual reality via computer modelling and simulation enables a person to interact with an artificial three-dimensional (3D) visual or another sensory environment (Loureiro et al., 2020). A user wearing a helmet with a stereoscopic screen views animated images of a simulated environment in a typical VR format. **Augmented reality** offers an interactive experience of a real-world environment where the objects in the real world are enhanced by computer-generated perceptual information, sometimes across multiple sensory modalities, including visual, auditory, haptic, somatosensory, and olfactory (Loureiro et al., 2020). **Mixed reality** merges the real and virtual world to produce new environments and visualizations, where physical and digital objects co-exist and interact in real-time (Speicher et al., 2019).

3.6 Specific Ways of Interpretation at Selected Types of Natural Monuments

The authors examined the ways and methods of interpretation in nine types of natural monuments/attractions. Specifics of their interpretation can be found in the following paragraphs.

3.6.1 Interpretation in Large-scale Protected Areas and National Parks

Large-scale protected areas refer to national parks, UNESCO biosphere reserves, as well as nature and landscape parks, special areas included in the Natura 2000 etc. A large-scale protected area is a precisely defined geographical territory established for the long-term conservation of nature and managed for this objective by legal or other effective measures. Both the ecosystem and cultural values play a role. 417 National parks in Europe (in 2023) cover an area of 225, 101, 454 ha.

National parks use a wide range of interpretation methods. Large territories are suitable for educational thematic trails. Background for interpretation often form **Interpretative visitor centres** usually with a permanent exhibition introducing the values of the given territory and the way it is protected. Modern centres have attractive design and use interactive elements to increase the interest of visitors. They also have space for temporary exhibitions, workshops and other events tailored to different segments of visitors. Visitor centres are also a good option for visitors in case of bad weather. They are built on sustainable principles and are harmoniously integrated with the landscape.

3.6.2 Interpretation in Small-scale Protected Areas, Regional Parks, Nature Reserves

Small-scale protected areas were established for the protection of the landscape and ecosystems of regional significance from the natural, cultural, and recreational point of view, and for regulation of their recreation and economic use.

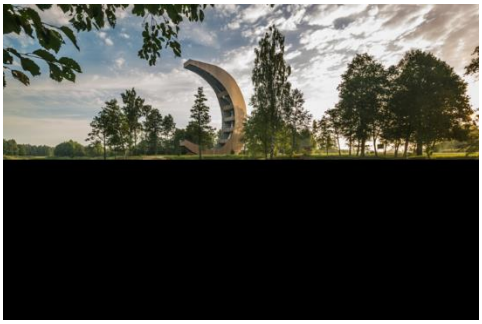
Figure 7. Europe`s Nature, Regional, and Landscape Parks

Source: Köster & Denkinger, 2017, p. 169–170

Regional Parks are adapted for public access. This includes the creation of visitor infrastructure, **educational trails and routes**, **sightseeing spots** to enable visitors to experience the outstanding value of the landscape. Special attention should be devoted to presenting landscapes and objects in a suitable manner. I**nformation panels** are installed. Many parks have developed interpretative educational activities. In some small-scale protected areas are smaller visitor centres centra, so-called Houses of nature with exhibition about local nature. They offer programmes oriented at nature protection. Watching points and shelters are built to facilitate wildlife watching. An interesting solution was implemented in Lithuania, where the

interpretation in all 30 Regional parks was coordinated for the whole republic. There is a central visitor centre in the capital, and integral parts of infrastructure in individual parks are interesting outlook towers (see images below).

Kirkilai Observation tower and Labanoras Regional Park Observation Towers




Source: photo from Lithuania Travel

Veisiejai Observation Tower

Source: photo from Veisiejai TIC

3.6.3 Interpretation in Geoparks and Coastal Landscape

Geoparks are territories with particular geological heritage. In Europe, there are currently 81 geoparks across 26 countries. The European Geopark network seeks to develop sustainable geotourism on a European scale through the promotion of nature heritage in these regions (europeangeoparks.org, 2021).

Coastal landscapes are areas bridging the land and the sea with the key characteristic of being rich in biodiversity, inanimate nature and nature heritage (Lal Mukherjee, 2020). From a tourism perspective, coastal areas are deemed the most popular and highly visited locations

throughout Europe and in many instances are the most important economic driver for local communities. From a nature heritage perspective, the main challenge in coastal regions across Europe relates not only to their diversity but to the diverging demand for coastal escapes from one region to the next.

Geotourism can be defined as “tourism based on geological features” (Dowling and Newsome, 2018; p. 1).

Different forms of coastal tourism are emerging as they become areas of recreation for leisure, activity, heritage and education. Appropriate methods of heritage interpretation, knowledge and education, could effectively transform the role of the tourist from observer to conservationist and serve as an ambassador for the environmental ethos of the destination.

Internationally, there is evidence of the importance of local community involvement in the development of conservation policy and activities that ensure the sustainable development of tourism activities in sensitive heritage destinations such as designated geoparks and coastal landscapes. This indicates the importance of engaging with local stakeholders such as tourism attractions, activities and businesses in ensuring the support of sustainable tourism and conservation management in eco sensitive regions.

There exists a range of potential interpretation methods available to managers at nature heritage sites such as geoparks and coastal landscapes. **Outdoor interpretation panels** are the most common method of interpretation regarding nature heritage. These panels take different forms (e.g. lectern panels, upright panels, way marker post panels). The most usual form is landscape lecterns or upright panels displaying photos, maps and information or diagrams and illustrations about the area or site. **Indoor graphic panels and displays** include the following: a visitor center dedicated to interpreting the heritage of a particular area or site, an education classroom or center, exhibition panels (within an existing building), models and displays of artefacts.

Live interpretation uses **guided walks, tours and demonstrations**. This type of interpretation can include many forms, such as formal lectures, informal talks, guided walks and hikes, demonstrations and workshops. These can be delivered by staff members, volunteers and ambassadors, external experts or partners. **Performances and theatrical events** include a variety of experiences such as re-enactments of historical events, celebrations of important historical events and demonstrations of historical methods of work (e.g. farming).

Publications can take many forms: a simple map of a site, visitor map of the geoparks area or trail including site information, information leaflets, an in-depth booklet or guidebook (e.g. geological information), education workbooks or posters.

Activity packs/areas include the development of self-led activity trails. These can be developed as an additional interpretative media and targeted to children/young people to enable them to fully explore and understand the uniqueness and importance of these sites.

- Low-tech interactive displays. Jigsaws, models, lift-flaps, reveler wheels etc.
- High-tech interactive displays. Virtual reality / augmented reality
- Audio Media. This includes the development of short audio media clips. Fixed on-site devices as well as mobile forms of communication such as on websites. This is an excellent medium for presenting dialogue in a range of languages and is also useful for individuals with visual impairments and mobility issues.

Labels and plaques are used to identify individual specimens (e.g. trees/shrubs, individual structures in tombs/buildings). **Audio Visual Media** refers to the use of projected presentations with sound that can be projected onto screens, walls or glass. This also includes holograms. **Multimedia** to the use of gaming, virtual reality and augmented reality. **Interactive App** providing interpretation can be downloaded prior to visits and provide background information, maps, directions and visitor trails. **Arts Media** refers to visual arts, poetry, stories that can be experienced independently or through live performances and events. (Drifting Apart, 2018)

3.6.4 Interpretation of Caves

Cave tourism is a part of nature tourism, ecotourism or geo-tourism that is increasingly attracting interest worldwide. Tourists are attracted to visiting valuable and fascinating caves for their natural beauty and learning potential. Tourists also visit the caves for educational purposes, for simple recreation or for adventure. (Lobo, 2015; Rindam, 2014; Okonkwo et al., 2017).

Caves have immense value as a means of experiencing nature-based tourism with special interest for adventure tourists, as well as for those interested in archaeological information on habitation of past humans. Thus, if effectively managed, caves are an important source for the tourism industry since they can bring economic, environmental and social benefits to the region where the cave is based.

During the 17th century, natural caves started to open to tourism. There exist approximately 500 show caves attracting over 50,000 visitors per year worldwide, with a total of 250 million visitors paying to visit them. Therefore, today, these caves are incredibly important geo-tourism targets representing a significant economic resource (Cigna, 2016).

The development of a **show cave** requires the construction of stairs and trails and the installation of lighting. The safety of visitors is also important for caves, especially the slippery surface and the CO2 content near the surface. Managers and guides must be trained to recognize their roles both as educators of the public as well as being responsible for the preservation of the cave (Cigna, 2016).

Personal guided tours are the most extended interpretative technique in cave tourism because they are considered to provide a better and more complete experience than other non-personal interpretation methods (McArthur, 1998). Cave tour guides are necessary for the security of the visitors in showing the way, pointing out hazards such as overhanging rocks and wet surfaces as well as ensuring that people do not get lost during the visit. The interpretative guide is also the main guardian protecting the cave's environment.

Small information centers are located close to the entrance to the cave. They inform about natural values of the cave and its surrounding.

Non-personal interpretation methods in caves bring the visitor opportunity to interact with the concept autonomously, so their visit is freer and more flexible. The most common of these are **printed information sheets and brochures,** physical settings at the cave such as **signs/plaques** and **interactive audio/visual devices** using today's modern technologies that can be placed outside the cave to open the interpretation offer to the visitor.

Interesting interpretative solution is a **replica of the cave** Altamira. The reason for this solution was a strict protection of the original cave.

3.6.5 Interpretation of Volcanic Island Landscape

Interpretation of a specific volcanic island landscape is introduced using as an example, the Azores. The Azores are an archipelago of nine islands in the North Atlantic Ocean spanning three tectonic plates: the Eurasian Plate, the African Plate and the North American Plate. This position gives it unique geological features. The location makes the Azores an extraordinary case in geotechnical terms, having a constant seismic activity and volcanoes that form islands.

All the islands are of volcanic origin, with the most evident volcanic activity on São Miguel Island.

Tourists can visit the craters of extinct volcanoes, active fumaroles, and maritime banks. A visit to the Azores involves the sea and the land, walking, reflecting and diving. The Azores are a great example of a perfect combination of soil, ocean and climate, fauna, flora, and human presence. Azores have not yet been discovered by mass tourism, and its interpretation has been planned and developed with a concern not to invade nature.

Interpretative centres are **environmentally integrated** and in complete harmony with their surroundings. These centres are educational and informative, based on factual scientific knowledge, and make heritage interpretation accessible and efficient for all visitors.

In the Microbial Observatory of the Azores (OMIC) it is possible to observe microorganisms native to the Azores under the microscope. The Azores Volcanological and Geothermal Observatory (OVGA) offers detailed explanations through guides with geological training about the formation of the archipelago, understanding how, over time, each of the islands was formed by the encounter between fire (volcanoes) and sea (Atlantic Ocean). The **guided tours** are interactive, based on interaction and dialogue. Special attention is given to children as there are activities aimed at this target group, such as quizzes and demonstrations.

Personal information is provided by highly specialised tour guides. The **tour guides** are mostly locals who graduated from the University of the Azores and speak with extreme pride about their region. Their way of communication is not only based on facts but also on emotions.

Heritage interpretation is supported by **various communication techniques** such as **signs and plates, audio-tours, video screening, and digital tools.** (Brilha, 2006; Lück, 2008).

3.6.6 Interpretation in Cultural Landscape, Palace Gardens, Zoos and Botanic Gardens

Cultural landscapes are at the interface between nature and culture, tangible and intangible heritage, biological and cultural diversity – they represent a closely woven net of relationships, the essence of culture and people's identity. Cultural landscapes are a focus of protected areas in a larger ecosystem context, and they are a symbol of the growing recognition of the fundamental links between local communities and their heritage, humankind and its natural environment. (Rössler, 2006, p. 334) 114 properties with 5 transboundary properties (1 property

delisted) have been inscribed on the World Heritage List as cultural landscapes. (UNESCO, 2021)

Gardens, in particular palace gardens, have outstanding natural, cultural and historical features with a unique history that has the potential to provide the visitor with an authentic experience. Visiting gardens is an important segment (niche) in the tourism industry.

Zoos are “permanent facilities in which live animals of species that live in the wild are kept for purposes of display. The zoo is one of the most popular tourist destinations.

Botanical gardens are institutions holding documented collections of living plants for the purpose of scientific research, conservation, display, and education. (BGCI, 2021).

As there is a variety of interpretation methods. **Guided walks** through the living collections on several thematic itineraries are one of the most frequently offered. Guides in gardens are expected to show appropriate **emotional** expression to establish a connection between the object of interpretation and a visitor.

The arrangement of the zoo exposition in the form of a "safari" is very interesting, when the animals live freely and the visitors drive through in cars for safety reasons. This is an example of zoo Dvůr Králové nad Labem in the Czech Republic.

Botanical gardens and zoos provide a framework for **educational programmes** to raise awareness for issues related to sustainability, biodiversity, climate change, and conservation of nature heritage. They often offer **workshops on scientific experimentation** in an authentic laboratory.

Interpretation also uses some form of events, e.g., flower **shows**, garden **festivals**, **tasting** (gourmet garden).

Individual tours are available as **virtual tours**, **mobile apps** or **audio guides** through the area.

3.6.7 Interpretation of River Deltas

River deltas represent an environment with a specific biodiversity deserving specific protection and development policies. Deltas are small shore protuberances were rivers flow into oceans, seas, lakes, lagoons. Rivers are divided into multiple branches before flowing into the sea. A delta comprises two parts: underwater and subaerial (National Geographic, 2023). Deltas

have been included among the most vulnerable coastal areas. Delta is a habitat (the place or type of site where an organism naturally occurs) for many species of plants, microbes, animals, particularly of birds.

The Volga Delta is the greatest delta in Europe. Notable deltas in Europe are e.g., Nemunas Delta in Lithuania, Llobregat and Guadalquivir River Deltas in Spain, Rhône River Delta in France, Danube Delta in Romania.

The specifics of heritage interpretation in river deltas result from the specific nature of these natural areas. The large surface of a specific geographical space sometimes guides the planning of the interpretation towards certain methods such as **thematic trails**. In bird reserves, **ornithological observation sites** are built. The background for interpretation is in **visitor centres**. Wildlife/nature is unpredictable: the interpretation method should always allow for some flexibility to consider the season, the weather, and the fact that wildlife may not appear "on demand or on command". It is, therefore, not recommended to make unrealistic promises about the possibility to discover anything exciting and unusual. "Live the experience" could be the main theme of interpretation.

Visitors' ignorance and lack of experience, especially regarding wildlife, is a challenge. Interpretation can help increase their awareness by providing information, answering questions, managing difficult situations, establishing a period of accommodation, etc.

There are also security and safety issues. It is not only nature that needs to be protected, but also visitors. The information provided in different forms (verbal, written, through images) is, thus, also a safety measure, referring both to the protection of visitors and the protection of plants and animals. Sometimes, there are barriers, railings or directed paths that limit access. Visitors must comply with unpleasant instructions: "Stop, wait, look and listen."

3.6.8 Interpretation of Water

The part of the Earth's surface that is formed by water is called the hydrosphere. Water covers most of the surface of the Earth (74%). Water is crucial for the existence of life on our planet. It is a scarce, irreplaceable elementary material that has many meanings and uses for mankind. (EVVO, 2011). Water is also often related to spiritual values and religion. Many popular pilgrimage sites can be found at springs with healing effects.

One of the most pressing issues that we are facing today is extremely high-water consumption, which has a negative impact on water circulation in nature. Tourism is a water demanding industry. Tourist destinations especially in southern and developing countries face serious difficulties caused by tourists consuming too much water every day. One of the most water-intensive facilities and services in the tourism industry are hotel swimming pools and wellness facilities, spa services and golf resorts. A high direct consumption is generally connected with guests' hygiene needs, the daily maintenance and cleaning of facilities and the maintenance of parks and common greens.

Nature heritage interpretation is based on two aspects. The first one results from the feature of this nature phenomenon and nature sights themselves, when many features connected with water are invisible and transient. However, it is possible to use interactive methods for its interpretation so that people can learn about characteristic features of water through playing. The second characteristic results from the fact that, despite its scarcity, people tend to take water for granted.

The main aim of water heritage interpretation is to help visitors understand the importance of the visited sights, also emphasizing the importance and value of water for our daily life.

Specific and very attractive interpretation of water is offered in facilities called water world. It is a thematic park where the waterpower and possibilities of water utilization are introduced in an interactive way. Example is the House of water in the Czech Republic, WasserWelten Krimml (A) and Hydropolis in Wroclaw in Polen.

Commonly used are also **museums** situated in former purification stations and similar facilities.

Information panels and heritage/educational trails are built along rivers, lakes, and other water sites.

Technical sights connected with water offer **occasional events** like **open-house events**. **Guided tours and excursions** under the leadership of professionals working there, visitors can visit the "backstage" of the facility and get a better insight into the operation of such facilities as dams and waterpower plants, labs, purification stations, sewage plants etc.

3.6.9 Interpretation of Sky

The sky forms an integral part of our environment in which mankind lives and which people perceive.

In the past, observation of space objects influenced the behaviour of people and their perception of the world, astronomic knowledge formed human culture in a certain sense. Therefore, we can perceive the sky as universal heritage.

Astronomical heritage exists in the form of tangible monuments or places that are in some way connected to the sky and its observation, physical objects (instruments, archival material), intangible knowledge and the natural environment that supports people's interest in astronomy. Interpretation of the sky is necessary to identify places associated with it, to recognise their value and importance, to protect them from external negative influences and to preserve the environment for future generations.

The UNESCO considers the night sky a part of world heritage, even though neither the natural sky as such, nor regions of dark sky can be inscribed on the List of World Heritage (UNESCO, 2015).

Due to light pollution, it is more and more difficult to find places with suitable conditions for night sky watching. Under favourable conditions, people can see 3000-5000 stars in the dark sky, however, in most of the territory of the Czech Republic due to light haze, people can watch only 1000-1500 stars out of towns and only several tens or hundreds of stars in big cities.

This is the reason why so-called national or international parks and reserves of dark sky are created under patronage of the International Dark-Sky Association.

Specifics of sky interpretation and interpretation of other astronomic phenomena result from the fact, that these features are mostly intangible, passing. The size of the universe and processes going on there are unimaginable for many visitors and so their interpretation needs to be adapted according to this situation.

A typical and specific facility specialized in comprehensive interpretation of the sky are astronomical observatories and planetariums. An observatory is a place from which processes in the space can be observed. They are equipped with devices (telescopes and sextants) for watching the sky. A planetarium is an educational (educative) facility with halls, where projectors simulate sky processes on the ceiling with artificially created sky with stars. Modern planetariums use 3D technology. Observatories and planetariums combine different methods of interpretation (models of solar systems, educative programmes, lectures, projections, educational films, multimedia programmes, workshops, games, exhibitions, printed materials,

etc). They offer a wide range of topics in programmes prepared for different age groups of visitors.

Models of the solar system are interpreted also in a form of educational planetary trails. Models of the Sun and other planets are situated linearly in nature (the size and distance are in the scale showing the relations among individual bodies of the system. Interpretation panels are placed along the trail.

There are several mobile applications for star watching and their interpretation.

An interesting way of interpretation is the installation of Focault's pendulum, which demonstrates the rotation of the Earth on its axis.

Museums dedicated to important astronomers and displays of astronomical instruments are also part of the range of interpretation.

Conclusion

As evident, there exists **a range of options** for management in choosing the most appropriate interpretation method depending on the size and type of nature heritage attraction and the characteristics of the tourist seeking to visit this site. The **interpretation efficiency** relies on a complete understanding of the site and choosing the **appropriate methods of interpretation** to enhance the visitors' experience and the site's uniqueness. These Guidelines bring examples of best practice in different European countries.

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4. Good Practices

In the following you will find different best practices for the methods of interpretation.

The list of good practices:

4.1 The Burren Eco-Tourism Network (BEN)

4.2 Bird sanctuary

4.3 Bird watching

4.4 Open-air Classroom

4.5 Zoo academy Heidelberg

4.6 Kladská – barrier-free trail

4.7 Sky Walk Dolní Morava

4.8 Rocks – Questing

4.9 The Cuevas del Águila

4.10 Walks round astronomic Prague

4.11 Fountains in Bad Reichenhall

4.12 Las Cuevas de Sorbas

4.13 House of Water Hulice

4.14 European watersheds model

4.15 De Hondsrug Geopark

4.16 Cormac's Coast, Ireland

4.17 Giants' Causeway, Northern Ireland

4.18 Dam and dam water reservoirs

4.19 Open Garden

4.20 Parco Delle Madonie, Italy

4.21 Territory of the dark sky

4.22 International Dawn Chorus Day

4.23 Lough Hyne, Co. Cork

4.24 The Wild Atlantic Way

4.25 Nemunas Loops Regional Park, Birstonas

4.26 Cueva del Viento (Tenerife, Islas Canarias, Spain)

4.27 Vřídlo (Hot Spring) Karlovy Vary

4.28 Coves de Sant Josep (La Vall d'Uixó, Castelló, Spain)

4.29 Veisiejai Regional Park, Veisiejai

4.30 Casa da Montanha (Mountain House)

4.31 Jameos del Agua (Lanzarote, Islas Canarias, Spain)

4.32 Kutná Hora – Equinox

4.33 International rowboat festival 'Rowmania FEST'

4.34 Luhačovice spa – artistic interpretation of mineral springs

4.35 Elbe (Labe) spring

4.36 The Wild Kitchen

4.37 The Cuevona de Cuevas del Agua

4.38 Museum – Danube Delta Eco-Tourism Museum Centre

4.39 Water of the Earth

4.40 Thematic trails – Danube Delta

4.41 Planetarium Trail

4.42 Walks with Pius

4.43 Hydropolis Wroclaw

4.44 Visitor Centers – Sulina Tourist Information Centre

4.45 Algar do Carvão

4.46 Falkensteiner – a responsible approach of hotel management to water

4.47 Dessau-Wörlitz Garden Realm, Germany

4.48 Muskauer Park, Germany/Poland

4.49 Palace and gardens of Schönbrunn

4.50 Schwerin Palace Garden

4.51 The botanical garden of Padua

4.52 The Palaces and Parks of Potsdam and Berlin

4.53 Externsteine – "Media X"

4.54 Capelinhos Volcano Interpretation Centre

4.55 Casa dos Vulcões (Volcanoes' House)

4.56 National Visitor's Center of Protected Areas, Vilnius

4.57 Anyksciai regional park, Anyksciai

4.58 Birzai regional park, Birzai

4.59 Gruta das Torres (Towers Cave)

4.60 Luhačovice spa – interpretation of mineral springs

4.61 Building and Survival Games – Minecraft Azores

4.62 Building and Survival Games – Minecraft Madeira

4.63 Star constellations – mobile application

4.64 Azores Microbial Observatory

4.65 Azores Volcanological and Geothermal Observatory

4.66 Labanoras Regional Park

4.1 Good Practice – The Burren Eco-Tourism Network (BEN) by Aisling Ward

Description

A network of tourism enterprises that collaborate in the pursuit of marketing the Burren and Cliffs of Moher Geopark as a principal sustainable destination with conservation and education as a key objective of the organisation.

The BEN works in conjunction with the UNESCO and adheres to the Geopark Code of Practice in ensuring the sustainability of the region from an environmental and social perspective.

In 2022 the Burren was named as the best place to holiday in Ireland by the Irish Times and Failte Ireland (NTO).

Method(s) of interpretation

- Interpretation plays a key role in ensuring the sustainability and educational aspects of the Burren are maintained.
- Marketing – social media, website, TV programmes and books about the region and its unique geology.
- Leave No Trace training for members and certification to communicate this to visitors.
- Branded Tote bags – provided to visitors and used as a mechanism for tourists to return their rubbish to be discarded sustainably by accommodation providers. This increases the level of awareness amongst visitors of their impact in a region.
- The Burren Dinners – Cookery book by local chefs using locally sourced product (Trevis, 2019).

Image

Source: author´s archive (*Jarolímková, 2023)*

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4.2 Good Practice – Bird sanctuary by Marcus Wieschhoff

Description

As one of the most important bird sanctuaries in Central Europe, Lake Neusiedl National Park has always attracted scientists from renowned research institutions and interested laypeople, such as amateur ornithologists. While the purely scientific activities focus mainly on conservation measures and changes in the biosphere, thousands of bird-interested visitors come to the lake every year and at any time of the year to observe rare bird species, some of which are threatened with extinction.

Method(s) of interpretation

Different options for bird watching and interpretation are offered:

- A park map indicates legal and easily accessible observation points. Observation is allowed and wanted there.
- A publication about the birds at Lake Neusiedl and the possible routes for observation are also offered for download. The guide (with more than 300 pages) is equipped with many illustrations and maps, and offers details on each tour such as information on flora and fauna, the best observation periods, seasonal features, etc.
- Another offer are the sound recordings of individual bird species.

References and further readings

Nationalpark Neusiedler See – Seewinkel (n.d.). *Nationalparkkarte Abrissblock*., Retrieved from https://www.nationalparkneusiedlersee.at/media/1403/2020-10-05-01-np-abrissblock-a2__online.pdf

Roland, C. (2020). *Birding Hotspots: 43 Routen rund um den Neusiedler See*. AULA-Verlag. Retrieved from https://permalink.obvsg.at/AC15749544

4.3 Good Practice – Bird watching – The Caraorman Bird Sanctuary by Mirela Ştefănică

Description

The Bird Sanctuary is located on one of the most important migration routes in the Danube Delta attracting species such as terns, divers, ducks, and herons, which find good conditions for nesting there. Pelicans, ducks, and geese use the area as a place for refuge, rest and feeding.

In spring, when lakes and canals have high water levels and many areas are flooded, birds find shelter in the Caraorman fishery, attracted by low water levels, enough food and peace there. Nevertheless, due to its construction system, water levels also rise in the Caraorman fishery, though at a much slower pace; this means that, at the beginning of summer, when water levels normally start falling in the Danube Delta canals and in the nearby lakes, water levels are still quite high in the fishery, which explains why so many bird species are drawn to the site. It is only at the end of September that water levels in the bird sanctuary begin to fall.

The area provides ideal conditions for over 50 species. More than 180 bird species can be found there in the nesting period, during migration and wintering. Among these, 55 are protected species. During winter, the area is sheltered from the cold and, consequently, the water in the fishery does not or rarely freezes. In the pond, there are two nesting platforms which attract over 30 seagull pairs on a regular basis. They use the platforms to lay eggs. Hunting and fishing are forbidden in the fishery. Since 2010, the sanctuary has been under the Romanian Ornithological Society's observation.

Method(s) of interpretation

Inside the Bird Sanctuary, an interpretation of the evolution of the Danube Delta management over the last 100 years will be organized. Two hides are set up to allow tourists and photographers to observe the Caraorman birds. They will enjoy the wonderful world of birds at a close distance without scaring them or disturbing their habits.

A special type of tour is the one intended to introduce tourists to the identification of birds on the ground. The tourism program emphasizes the observation activity and the behavior of tourists in nature. The guide guides the participants on these issues, most simply through printed material as discussed in the field with them: the observer must use a determiner; observations are made quietly; given that the observer can identify the bird both by direct observation and by sounds, increased attention is necessary, sometimes distributive; observations are made with the sun behind, especially for open fields; the identification of the bird is done by: size, color, other elements (spots, stripes, size and shape of the beak, legs, neck); observing the bird's movements, including in flight; listening carefully to all the sounds produced .

At the entrance to the Sanctuary, there are panels that inform about the formation of the Danube Delta, Sanctuary and the species of birds that can be found here (Photo 1). Also, there are towers equipped with information boards with a very good view of the Sanctuary (Photo 2).

Image

Figure 1. Information panels at the entrance

Source: www.ecoturism.ecodeltadunarii.ro;www.facebook.com/ecodeltadunarii

Figure 2. Higher tower for birdwatching with information panels
Source: https://www.sor.ro/proiect/sanctuarul-pasarilor-de-la-caraorman/)

References and further readings

Asociația de Ecoturism din România (AER; 2017). *Observarea faunei şi florei. Manual de bune practice pentru ghizi.* Retrieved from https://www.asociatiaaer.ro/Publicatii/Observarea%20faunei%20si%20florei%20-%20manual%20de%20bune%20practici%20pentru%20ghizi.pdf

Eco Delta Dunarii (2023). *Eco Delta Dunarii.* Retrieved from https://www.facebook.com/ecodeltadunarii

Sandberg, E. (2020). *Nature interpretation in the nordic countries – a book about experiences, learning, reflection, and participation then people and nature meet*. Nordisk Ministerråd.Societatea Ornitologica din Romania, *Sanctuarul pasarilor de la Caraorman*, https://www.sor.ro/proiect/sanctuarul-pasarilor-de-la-caraorman/

4.4 Good Practice – Open-air Classroom by Marcus Wieschhoff

Description

The interpretation activities in the field of education are embedded in the national strategy for the interpretation of national parks (Nationalparks Austria, 2014). Educators in German-speaking countries have a varied and versatile range of methods at their disposal. The most diverse facets of the protected areas can be taken up for teaching and brought closer to children and young people. A download area is available on the National Park website, offering a variety of didactic materials (National Park Bildung, 2023).

Method(s) of interpretation

- Through a download centre different educational methods of and tools for interpretation are offered: sing-along music videos, podcasts, fact sheets, documentaries (short videos), map material, and didactic material.
- Different programs are offered:
    - Full-day and multi-day programs: thematically designed full-day and multi-day programs, an additional carriage or boat ride or an evening module can be booked. Themes are salt marshes, water as a living matter, Pannonian steppe, bird diversity or “a sea of reeds”.
    - Impulse field trips: Three-hour tour for school classes: participants will get a first insight into the different habitats, learn about the tasks and the work of the rangers and the regional importance of the park. Groups are kept as small as possible and supervised by one ranger.
    - Evening module: search for bats using “bat detectors”, catch nocturnal insects using a light screen, and puzzle rally at dusk, Of course, a campfire barbecue is included.

References and further readings

Nationalparks Austria (2014). *durch.blick.kontakt – Die österreichischen Nationalparks im Unterricht.* Retrieved from https://www.data.gv.at/katalog/dataset/durch-blick-kontakt-die-osterreichischen-nationalparks-im-unterricht

National Park Bildung (2023). *Downloads für Schulen* Retrieved from https://nationalparkneusiedlersee.at/de/downloads-fuer-schulen/

4.5 Good Practice – Zoo Academy Heidelberg by Valerie Isabel Elss

Description

"Zoo Academy" is the name of Heidelberg Zoo's new education department. The institution was founded at the beginning of 2020 from the initiative Zooerlebnis e.V. – "Zooschule" – and the Explo Heidelberg (Zoo Heidelberg, 2021) and was awarded as a place of learning in the World Action Programme on Education for Sustainable Development by DUKO, among others (DUKO, 2021).

Method(s) of interpretation

- Heidelberg Zoo's educational mission for different age groups is essentially covered by a programme, which is made up of four areas: "Animals & Nature" (including observation offers), "Exhibition" (including interactive hands-on stations, models, and media), "Technology" (modern production techniques, programming, sustainable use of resources) and "Laboratory" (including molecular biological investigations; Zoo Heidelberg, 2021).
- The following interpretation methods are implemented: workshops, scientific experimentation, offers on modern technology (3D printing, etc.), presentation of interactive exhibitions and hands-on stations, visits to the zoo animals with special observation offers and illustrative materials (e.g., experience-based tour) and a lot more

References and further readings

DUKO (2021). *Zoo Heidelberg*. Retrieved from https://www.unesco.de/bildung/bne-akteure/zoo-Heidelberg

Tourism Heidelberg (2022). *Heidelberg Zoo*. Retrieved from https://www.tourism-heidelberg.com/explore/attractions/heidelberg-zoo/index_eng.html

Zoo Heidelberg (2021). *Die Zoo-Akademie*. Retrieved from https://www.zoo-akademie.org/de/ueber-uns/zoo-akademie

4. 5 Good Practice – Zoo School Schwerin by Valerie Isabel Elss

Description

The Schwerin Zoo offers school classes specially equipped learning sites: The school in the countryside has a computer cabinet, an artfully decorated classroom with many interesting specimens, a research camp on the water and a forest school. A variety of subjects are offered for the subjects of science, biology, chemistry, mathematics, geography, computer science, physics, and art (Zoologischer Garten Schwerin gGmbH, 2023).

Method(s) of interpretation

- Offers for different age groups
- Research camp (i.e. “animals in and around water”)
- Forest school (i.e. “winter feeding of birds”)
- Zoo school (i.e. “The continents of our earth and their fauna”)

Image

Zoo Schwerin

Source: author´s archive (*Elss, 2021)*

References and further readings

Zoologischer Garten Schwerin gGmbH (2023). *Sie möchten den Schulunterricht in den Zoo verlegen?* Retrieved from https://www.zoo-schwerin.de/erlebnisse/zooschule/uebersicht

4.6 Good Practice – Kladská – barrier-free trail by Liběna Jarolímková

Description

Kladské peat bog is a national nature reserve in the Protected Landscape Area of Slavkovský les (Slavkov Forest) in the West of the Czech Republic. Its part is Tajga, a forest-raised peat bog. Peat bogs started to emerge more than 10 000 years ago in places, where water was caught in small lakes. Later, in the time of the younger Quaternary, the lakes started to be clogged with water plants and several types of peat mosses. The peat layer is 6m thick here. Peat bogs represent extreme habitats for plants. These ecosystems are very acidic and therefore they lack nitrogen and phosphor. For this reason, some plants developed a mechanism, for how to get these elements in another way, and they became carnivorous. Visitors to Kladsá peat bogs can see the best-known carnivorous plants such as Drosera Rotundifola and Pinguicula Vulgaris, and many rare mosses and lichens. Some rare types of invertebrates such as Colias Palaeno and Boloria Aquilonaris are here at home, too.

Method(s) of interpretation

- There is a 1,6km barrier-free heritage trail on an elevated bridge pavement around the peat bog Tajga. It leads along open bogs with water surface. Interpretative panels inform visitors about the history of Kladská settlement, plants, and animals of Slavkov Forest and nature reserve Kladské peat bogs There are relax zones and look-out points en-route.

References and further readings

Geologické lokality (2016). *Kladské rašeliny – Tajga.* Retrieved from http://lokality.geology.cz/d.pl?item=7&id=3967&Okres=CH&vyb=1&text=Lokality%20v%20okresu

4.7 Good Practice – Sky Walk Dolní Morava by Liběna Jarolímková

Description

A path in the sky is an outlook construction of a unique shape made of wood and steel situated above the village Dolní Morava in the Czech Republic. This 55m high construction was built 1,116m above sea level. It offers a unique view of Kralický Sněžník mountain ridge. One part of the path is a heritage trail focused on clouds, topography, and ecology, which means that whereas other similar outlook constructions are oriented at the interpretation of various tree levels, here visitors can watch cloud, fog, haze, and other meteorological features typical for local atmosphere and climate.

Method(s) of interpretation

- The path has interpretation panels with information about the landscape, local nature, and the construction itself.
- The path is barrier-free, accessible even for visitors with mobile difficulties.

Image

Sky Walk Dolni Morava

Source: *pixabay.com (2019)*

References and further readings

The Sky Walk https://www.dolnimorava.cz/en/about-the-sky-walk

4.8 Good Practice – Rocks – Questing by Liběna Jarolímková

Description

The village Sedmihorky lies at the edge of the Protected Landscape Area Český Ráj (Czech Paradise). The village has been a hydropathic spa since the 19th century. Picturesque surrounding of a rocky town in the vicinity of this spa is a popular tourist destination. A very interesting interpretation game – Quest, was created here within a project "Questing – new ways to learning about local nature and cultural heritage in the Czech Republic". In this game hiking and familiarization with the nature through searching for clues, solving puzzles and crosswords are connected.

Interpretation through a game – Questing – is suitable for children and adults. It may help to spread the flow of visitors more equally in the destination and encourage them to visit even less known places. Questing may help destinations increase the number of visitors.

Method(s) of interpretation

- Tourists pick up a simple map and a riddle in the form of a poem from the information centre. The Quest consists of different tasks visitors have to complete en-route. The poem gives a tourist an idea about the route and then they have to complete the riddle with correct answers. At the end of the route the visitor is awarded with a small stamp or brochure.

References and further readings

Všechna práva vyhrazena (2023). *Sample of a quest from the geopark Český ráj (Czech Paradise).* Retrieved from http://www.sevceskyraj.cz/web_files/prilohy/729/hledacka%20Cesky%20raj.pdf

4.9 Good Practice – The Cuevas del Águila by Máximo Cortés

Description

The Cuevas del Águila are a wonderful karst landscape, forming a fascinating and unique underground world in the center of the Iberian Peninsula. They are very close to the town of Arenas de San Pedro (Ávila). The "Gran Sala de la Caverna" stands out, full of stalactites, stalagmites, and columns of multicolored limestone rock, as well as the translucent formations created by the mixture of water with mineral salts and limestone rock. The type of limestone rock is soluble, the geological process is very slow and that is why these caves are of such interest. They were discovered by chance in 1963 by a group of boys who noticed that steam was coming out of the ground (due to the difference in temperatures). A year later they were ready to be visited by the general public.

Method(s) of interpretation

- Access is easy with a paved entrance. The guided tour lasts 40 minutes and provides many curious details about the discovery and formation of the caves. The caves are open to the public every day of the year.
- The total length of the tour is 1 km. The temperature inside is 15ºC or 16ºC all year round. Tickets are available at the ticket office or online for €10. All the necessary security measures are in place for visitors.

References and further readings

Cuevas del Águila (2023).*CUEVAS DEL ÁGUILA – Descubre un paisaje kárstico que se esconde bajo tierra*. Retrieved from https://cuevasdelaguila.com/

La vida son dos viajes (2023). *CUEVAS DEL ÁGUILA: HORARIO, PRECIO Y CÓMO LLEGAR*. Retrieved from https://lavidasondosviajes.com/espana/cuevas-del-aguila-horario-precio-como-llegar/

4.10 Good Practice – Walks round astronomic Prague by Liběna Jarolímková

Description

Prague, one of the nicest cities in Europe, was a centre of education in several historical periods. Many famous scholars and artists created their life works in Prague, they experienced their ups and downs here and they participated in the formation of science and cultural environment of their times. The Planetarium in Prague offers thematic tours with a certified guide to places connected with the life of personalities known from astronomy, physics, astrophysics, meteorology, geology, alchemy, and astrology.

Method(s) of interpretation

- Guided tour – Astronomy in the period of Rudolph II takes visitors to Hradčany castle and Lesser Town in the footsteps of astronomers Johannes Kepler and Tycho Brahe, who worked in Prague under the reign of Rudolph II.
- Guided tour – Seven centuries of astronomy shows visitors places, where the history of astronomy and related scientific fields were written (Klementinum, Karolinum, astronomical clock at the Old Town Hall).
- Participants of guided tours get "work sheets" and other study material.

Image

Walks round astronomic Prague

Source: author´s archive (*Jarolímková, 2023)*

Source: author´s archive (*Jarolímková, 2023)*

Source: author´s archive (*Jarolímková, 2023)*

References and further readings

Planetárium Praha (2023). *Štefánik Observatory.* Retrieved from https://www.planetum.cz/stefanik_observatory/

4.11 Good Practice – Fountains in Bad Reichenhall by Liběna Jarolímková

Description

The spa town Bad Reichenhall (DE) is called “a town of fountains”. There are 70 differently designed fountains in this small alpine town. Most fountains are supplied by ordinary spring water, some by salt water from Reichenhall´s spring. Classical and modern fountains characterize Bad Rechenhall town landscape, some liven up house facades. The best-known salt spring is led to the fountain Alpen-Sole-Springbrunnen in the spa park. A tradition of fountain decoration in Easter time is preserved at the fountain Florianibrunnen, which is decorated with 3500 hand-decorated Easter eggs every year.

Method(s) of interpretation

- A printed brochure in a handy format brings a very nice overview of all fountains and is very helpful for sightseeing tours of the town. It features 70 fountains and a plan of the town. There is a name of the author and the year of its installation under each picture.

Image

Plan of fountains in the centre of Bad Reichenhall

Source: author´s archive (*Jarolímková, 2023)*

References and further readings

Bayerisches Staatsbad Bad Reichenhall Kur-GmbH Bad Reichenhall/Bayerisch Gmain (2016). *Brunnen in Bad Reichenhall und Bayerisch Gmain*. Retrieved from https://www.bad-reichenhall.de/cdn/uploads/rh-brunnenfibel2016-web.pdf

4.12 Good Practice – Las Cuevas de Sorbas by Máximo Cortés

Description

The Sorbas caves, in the province of Almería, form the largest underground complex in Spain, with more than a thousand caves and a thousand sinkholes on its surface in which the humidity condenses, forming small oases of palm trees and willows. There are kilometers of galleries full of stalactites and stalagmites, excavated in the gypsum rock, a crystalline rock that reflects the light of the visitor's hooves. Several different caving routes are offered along the way, depending on the level of those who want to venture into the caves of Sorbas.

Method(s) of interpretation

- They offer caving activities suitable for all ages, with specialized qualified instructors, approved equipment, and risk insurance.
- All the routes can be done in Spanish, English, French and German, depending on the time of year or the number of participants. You can obtain all the necessary information and book your visit through their website. They have a large car park, changing rooms, restaurant, and shop.

References and further readings

Barcelo.com (2023). *Cuevas de Sorbas, entre espejos minerales y estalactitas.* Retrieved from https://www.barcelo.com/guia-turismo/es/espana/almeria/que-ver/las-cuevas-de-sorbas/

Cuevas de Sorbas (2023). *Karst En Yesos De Sorbas*. Retrieved from https://www.cuevasdesorbas.com/

4.13 Good Practice – House of Water Hulice by Liběna Jarolímková

Description

The House of Water is a modern visitor centre offering entertainment and education for both children and adults. It was built in the village of Hulice (CZ), only several hundred meters from the dam of Svihov water reservoir. It is situated in Želivka locality, which is an important region on a European level. This region belongs to the system of protected areas Natura 2000 (code CZ0214016). Protected animals living here are a Bat Black (Barbastella barbastellus) and a fish Aspius Aspius, a protected plant is Minuartia Smejkalii (MŽP, 2021). Švihov reservoir contains drinking water. After purification, river Želivka supplies 1.3 million people in Prague and central Bohemia with drinking water.

The main aim of the House of Water is to inform and educate the public about the importance of water for nature and people, based on the example of Želivka and the water reservoir Švihov, locations important on a European level. The house introduces all faces of water – from life in the water and around it, water in the air to the utilization of waterpower as a driving force for various machines and facilities, all in an interactive way.

Method(s) of interpretation

- Very well elaborated content of interpretation of water phenomena combining more methods of interpretation.
- The indoor exposition contains aquaria with fish, models, photos, information panels, audio-visual and film kiosks, and various interactive items. A water bar offers water tasting.
- The atrium is equipped with water game items, e.g., a water wheel, water pumps, water sluice, weir, Archimedes screw, and a fish ford.
- There is a heritage trail in the nature around the House of Water showing visitors around various types of water biotopes.
- The House of Water organizes professional lectures and guided tours for different segments of visitors, especially for school groups.

Image

Atrium of the House of Water with interactive game items

Source: author´s archive (*Jarolímková, 202)*

Source: author´s archive (*Jarolímková, 2021)*

References and further readings

MŽP ČR. (2021). Evropská soustava chráněných území Natura 2000. Evropsky významné lokality.Retrieved from https://drusop.nature.cz/ost/chrobjekty/evl/index.php?NAZEV_FI=%C5%BDelivka&CIS_FILTER=&KOD_NATURA=&KATEGORIE_FIND=&FZR=Ne+&KRAJ=&OKRES=&ORP_ICOB=&POVOB_ICOB=&HOBEC=&HKU=&ORDER_BY_CUST=&ORDER_CHECK=&__=+Vyhledat+&HID_PREKRYV=&HID_10000=&HID_5000=&ORDER_BYevl=&EDIT_ID=

Vodní dům (2023). *Poznejte vodu všemi smysly*. Retrieved from https://www.vodni-dum.cz/

4.14 Good Practice – European watersheds model by Liběna Jarolímková

Description

Watersheds form boundaries between neighbouring river basins. They are geographically important points and very often they form even political borders. Rivers from the Czech Republic, which is called a "roof of Europe" flow to three seas. The river Labe (Elbe) flows to the Nordic Sea, the river Morava, and other tributaries of the Danube flows to the Back Sea and the river Odra and its tributaries including the Lausitz Nisa mouth to the Baltic Sea.

Method(s) of interpretation

- The House of Water offers an excellent interactive interpretation of European watershed thanks to an interactive model of main European watersheds on the territory of the Czech Republic. This model is very demonstrative, since if a visitor throws a ball into the model, they can easily find out to which sea, water from that place runs.
- The panel with the interpretation of continental watershed is situated at a stone on which the outflow of water into two different water basins near Austrian Dorf-Leopoldschlag is shown.

Image

European watershed model

Source: author´s archive (*Jarolímková, 2021)*

Continental watershed on the border of the Czech Republic and Austria

Source: author´s archive (*Jarolímková, 2022)*

References and further readings

The European Continental Divide (2023). *About Divides.* Retrieved from https://continental-divide.eu/about-divides/

4.15 Good Practice – De Hondsrug Geopark, The Netherlands by Shirley Millar

Description

This geopark has an ice age landscape which consists of a series of parallel ridges separated by dry valleys and is unique in Europe. It was formed during the Saalian glaciation about 150.000 years ago when the north of the Netherlands was covered with a layer of ice of about one thousand metres thick. The highest point of this landscape stands at 30m above sea level.

Given its relatively flat topography it lends itself well to cycling tours for visitors of varying levels of ability.

Method(s) of interpretation

- Several cycling trails have been developed that can be experienced with or without a guide; the boulder trip, the ice age tour, the farmers trail and the Van Gogh cycling tour.
- The Hondsrug landscape has been a source of inspiration for artists for over 250 years. In more recent times, Robert Smithson created land art near Emmen. Many other artists followed his example and along the Hondsrug there is the opportunity to discover modern land art forms such as 'Gebroken Cirkel' near Yde which commemorates the discovery of the 'Girl from Yde', a bog internment.
- De Hundsrug has incorporated the use of virtual reality and augmented reality to bring some of their trails to life. The Sabre-toothed Tiger trail has been created for children and the Leewal time travel trail for adults.
- The Geopark also offers a variety of educational materials, such as complete lesson series with a teachers' manual, students' study materials, tips for excursions, films and photo material and puzzles which are all free to access.

References and further readings

De Hondsrug (2022). *Art and Artists Stories*. Retrieved from https://www.dehondsrug.nl/verhalen/kunstenaars/?lang=en

De Hondsrug (2022). *Facinating Trails*. Retrieved from https://www.dehondsrug.nl/routes/?lang=en?lang=en

4.16 Good Practice – Cormac's Coast, Ireland by Ana Cruz García

Description

This is a one-person business, Cormac McGinley who takes tourists around the Burren/Cliffs of Moher geopark in the West coast of Ireland. It is one of the businesses belonging to the Burren Ecotourism Network (see chapter 4). Like many other tourism businesses, his embodies sustainability but unlike others, his interest and passion for the environment and its biodiversity formed part of his upbringing (in a fishing family), education (Zoology, Marine Biology, Geology and Paeleontology) and his work experience (as a Ranger). It is this all-encompassing wealth of experience that characterises his tours.

Method(s) of interpretation

Personalised tours for a duration of three to four hours. The idea is that the tourists are at once with nature with little disruption apart from nature and the scientific knowledge of the interpreter.

Talks in conference rooms consisting of a photographic display and talk on the geology, wildlife and local heritage and history of the Cliffs of Moher and Burren area.

Sensory interpretation including touching fossils, tasting some of the wild plants, catching sea creatures and perhaps making and drinking potcheen (high-quantity pure alcohol drink)

Interpretation implies showing Cormac's **particular lifestyle** based on sustainability and self-sufficiency; he lives what he preaches!

References and further readings

Leave No Trace Ireland (2023). *Love this place.* Retrieved from https://www.leavenotraceireland.org/

McGinley, C. (2023). *Cormac's Coast.* Retrieved from https://www.cormacscoast.com/

The Burren Eco-Tourism Network (2022). *The Burren & Cliffs of Moher UNESCO Global Geopark.* Retrieved from https://www.burren.ie

4.17 Good Practice – Giants' Causeway, Northern Ireland by Ana Cruz García

Description

The Causeway Coast consists of a 193km rugged coastline running between Belfast City to Derry in Northern Ireland. Due to the oxygen-rich coastal waters of The Causeway Coast, it is home to a diverse range of marine life such as otters, seals whales, dolphins, basking sharks, and porpoises, along with a vast range of fish.

The most unique feature of the site is the remarkable natural sight of some 40,000 large, regularly shaped polygonal columns of basalt in perfect horizontal sections, that form a pavement. This unique landscape found on the Giant's Causeway came about as a result of volcanic activity some 50–60 million years ago. Legend has it that the causeway was built by an Irish giant, so he could do battle with a Scottish giant.

Method(s) of interpretation

- **Visitor Information Centre:** Opened in 2012, it has won awards for its design, architecture, and sustainability. The visitor centre provides an interactive exhibition exploring the stories and the science behind the Giant's Causeway.
- **Multilingual Audio Guides:** Outdoor audio guides provide information in eleven different languages on the landscapes, birdlife, marine life, science, and myths surrounding the Giant's Causeway. Audio guides for visually impaired visitors are also available.
- **Trails and Walks.** Four walking trails allow visitors the opportunity to explore the Giant's Causeway at their own pace. The trails are colour coded and are designed for all levels of fitness.
- **Outdoor panels:** A total of 115 individual outdoor panels, uniform in design, contain maps and schematic journey line devices, which highlight the broader context as well as the visitor's location. They also contain 'did you know' information providing the visitor with interesting information that they can easily take away with them.

- **Road markings:** The Causeway Coastal Route has designated brown and white way-markings to identify the driving route around the coast of Northern Ireland.

Image


Source: author´s archive (*Jarolímková, 2014*)

References and further readings

Giant Causewqay Guide (2023). *Explore Northern Irelands Only World Heritage Site – The Giants Causeway Guide*. Retrieved from https://giantscausewayofficialguide.com/

Tourism NI (2023). *Choose your Next Giant Adventure.* Retrieved from https://discovernorthernireland.com/

4.18 Good Practice – Dam and dam water reservoirs by Liběna Jarolímková

Description

Dam water reservoirs are built to regulate river flows, to protect the territory against floods, to store water to produce drinking water and for the production of electricity. Many dam water reservoirs have become important tourist destinations offering recreation, water sports and fishing. Visiting a dam tourists can get familiar with a lot of topics, e.g., about the nature linked to and influenced by a water reservoir, they can admire architecture of the dam, or technological equipment for utilization of water, they learn about ecological aspects of dams.

Examples of dam water reservoirs in the Czech Republic which are attractive for tourists are as follows: Lipno (the biggest water reservoir in the Czech Republic), Orlík (a water reservoir with the biggest volume of water in the Czech Republic), Dlouhé Stráně (the biggest pump storage hydroelectric power station in the Czech Republic with a unique technical solution) and Hučák (a waterpower station in art deco style). Within its educational programme, the ČEZ company (energetic company operating in Western and central Europe) created a network of information centres near important dams in the Czech Republic. Visitors can learn about the secret of waterpower; they learn how electricity is produced and admire the strength of the dam.

Method(s) of interpretation

- Visitor centres offering various forms of interpretation are built at major dams in the Czech Republic:
- Information panel with technical data of the dam
- Interactive models showing the operation of the waterpower plant
- Workshops in labs of the visitor center
- Special educative events, e.g., on World Day of Water
- Excursions into the inside of the dam and waterpower plant, guided tours are prepared in three versions – highly professional, popular-scientific and for the public only.

- Night experience tours of the dam and the interior when details stand out at night light.
- Virtual tours of the dam
- Heriatge trails aroud reservoirs featuring animals and plants living around the dam reservoir and along the river.

References and further readings

CEZ, a. s. (2023). *Infocentra*. Retrieved from https://www.cez.cz/cs/o-cez/infocentra

4.19 Good Practice – Open Garden by Liběna Jarolímková

Description

The Open Garden is an educational and consultancy centre managed by a non-governmental organisation Partnerství (Partnership). The centre is used for training and motivation of investors, experts, and the public in ecology. All admin buildings are passive. Rainwater is retained in three green roofs, grey water is purified in a root sewage plant, electricity is generated in a solar plant. Rigorous ecological operation of the centre is daily monitored by 73 measuring appliances. The collected date prove that the technologies used are sensitive to the nature as well as to financial costs. There are educative gardens and a town farm.

Method(s) of interpretation

- The Educative Garden of Four Elements is formed by 12 interactive stops divided into 4 thematic groups – Earth, water, air, and sun. The aim of these stops is to apply theoretical knowledge into practice so that children can master the information from nature sciences, physics, geography, and environmental courses more easily. Children can see here how river landscape functions, where the wind comes from and how to benefit from its force, how solar radiation differs from the artificial one or why we separate waste.
- Herbs and trees are grown and bees are kept in the Open Garden. In various workshops visitors learn how to make cosmetics at home or how to prepare food in an outdoor kitchen, etc.
- There are around 150 events per year, e.g. Pumpkin celebration, Herbs festival, Dandelion workshop.
- The Centre prepared many methodological materials for ecological education, e.g., on bees or waste: (https://www.otevrenazahrada.cz/OZ-2/media/Prilohy/SAKO-Brno-Ucime-se-o-odpadech.pdf)

Image

Open Garden Brno

Source: author´s archive (*Jarolímková, 2018)*

References and further readings

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TIC BRNO (2023). *Open Gardens (Otevřená zahrada).* Retrieved from https://www.gotobrno.cz/en/place/open-gardens-otevrena-zahrada/

4.20 Good Practice – Parco Delle Madonie, Italy by Ana Cruz García

Description

This Geopark accounts for just 2% of the surface of Sicily yet it represents almost all aspects of Sicilian geology. It has a very complex history that began over 220 million years ago and is mainly composed of dolomitic limestone with interesting karst morphologies, both on the surface and in the subsoil, developed more recently, 23.5 million years ago.

Method(s) of interpretation

- **Technological interpretation**: The Parco delle Madonie is the leader of the European project, *VR @ Geopark*, where advanced computer technologies are used to promote geoparks around the world. This project is a partnership between institutions across six countries: Italy, Hungary, Poland, Croatia, Turkey, Portugal, including two from the worldwide network of UNESCO Geoparks. (Madonie and Holly Cross Geopark – Poland). The aim is to develop an application usable by smartphone and tablet devices called "VR @ Geoparks App".
- **Website**: It presents a wealth of award-winning photographs of the flaura and fauna and scientific and academic papers to learn all the details about the biodiversity of the place and its impact in the region.
- **Wheelchair access**: An off-road wheelchair called a Joelette which allows individuals with reduced mobility to experience the geoparks. The philosophy of *Madonie at a slow pace* is that 'nature belongs to everyone and we must give anyone the opportunity to enjoy it', (Parco Delle Madonie, 2019)

References and further readings

All Trails (2023). *Parco delle Madonie: the best routes.* Retrieved from https://www.alltrails.com/parks/italy/sicily/parco-delle-madonie

Madonie Explorers (2023). *Brief Guide to Madonie Natural Park.* Retrieved from https://madonieexplorers.com/en/madonie-natural-park/

4.21 Good Practice – Territory of the dark sky by Liběna Jarolímková

Description

Territories of Dark Sky are founded with the aim to inform the public and professionals about the night environment, to educate people on this topic, and to promote the protection of the night environment with an emphasis on the dark sky. They are bases for the protection of the environment against light pollution.

The Territory of Dark Sky in the Jizera mountains spreads over a territory of nearly 75 square kilometres. This reserve of darkness is located in a rarely inhabited part of the Jizera mountains, far enough from big towns along the upper reach of the river Jizera in the territories of the Czech Republic and Poland. It is a territory with the highest density of darkness. Whereas people can watch only about 50 stars in towns, at Jizerka people can watch up to 2,000 stars in the case of good visibility.

Method(s) of interpretation

- There are recommended watching sites with information panels and maps of the sky in Regions of Dark Sky. They are also placed along a very popular cross-country skiing and bike trail.
- Organized star-watching with astronomers takes place on specific days.
- Workshops facilitate exceptional experiences under the night sky.
- "Counting stars for science" originally introduced as a romantic idea for St.Valentine´s Day celebrations is part of a participatory campaign "Globe at Night". Every February the campaign calls for monitoring the visibility of selected stars and so to support the science investigating the level of light pollution. Light pollution not only threatens natural night darkness but has an impact on energy consumption, wildlife, and human health. People from 180 countries have sent more than 200,000 measurements in the past 14 years according to which there is a risk of 10% brightening of the night sky per year in the near future.
- Regular astronomic star watching with telescopes is held for the public under the dark sky of the Jizera mountains at Jizerka.

Image

Sternepark Rhön printed flyer.

Source: author´s archive (*Jarolímková, 2023)*

Interpretation panel Jizerska Dark Sky Territory

Source: author´s archive (*Míšková, 2023)*

References and further readings

Biosphärenreservat Rhön (2023). *Flyer Sternepark Rhön*. Retrieved from https://www.biosphaerenreservat-rhoen.de/fileadmin/media/publikationen/pdf/Sternenpark_Rhoen_Flyer_2021.pdf

4.22 Good Practice – International Dawn Chorus Day by Liběna Jarolímková

Description

International Dawn Chorus Day is celebrated on the occasion of spring commencement when all migratory birds are again in their summer habitats so people can hear their nice chorus. This tradition was founded by British biologist Chris Baines in 1983.

The event is organized by the World Association of Protective Organizations BirdLife International, whose aim is to rescue birds, their nests and habitats, and global biological diversity. More than 80 countries join these celebrations.
On this day the Czech Association of Ornithologists organizes a festival "Welcoming of Dawn Chorus". Walks in waking up spring nature, often complemented by the ringing of birds, building bird boxes, and other promotions of bird protection are prepared in many places in the Czech Republic.

Method(s) of interpretation

- Various events are held on the occasion of International Dawn Chorus Day, such as trips to forests, meadows, bird reserves or bird-watching stations to listen to bird chorus or lectures, etc.

- Mass media also join the effort to improve awareness, e.g. BBC broadcasts thematically focused programs, Czech radio Vltava broadcasts bird´s singing at dawn from various places in the Czech Republic and abroad, e.g. from the garden of Troja castle (CZ), from Berlin (GE) and from Irish or Estonian countryside.

- Observation towers and heritage trails are built to provide people with the opportunity to learn more about birds. The bird trail near Horní Planá (CZ) has 17 stops with panels featuring a local bird. Visitors should guess its name. They can check the correct answer through the QR code.

- Bohuslav Nauš´s Trail of Bird boxes in Prachatice (CZ) is very unique. It shows why it is important to support bird nesting in the contemporary landscape and how to do it.

Image

Panel with an overview of birds in a park in Zlín (CZ)

Source: author´s archive (*Jarolímková, 2020)*

Panel at the heritage trail (A)

Source: author´s archive (*Mišková, 2023)*

References and further readings

BBC (2020). *British Birdsong Montage | International Dawn Chorus Day | BBC Earth*. Retrived from https://www.youtube.com/watch?v=xudHav8digY

Discover Wildlife (2023). *Dawn chorus guide: what it is, how to hear it, and when International Dawn Chorus Day is celebrated.* Retrieved from https://www.discoverwildlife.com/how-to/watch-wildlife/dawn-chorus-guide/

4.23 Good Practice – Lough Hyne, Co. Cork by Ursula O'Donnell

Description

Lough Hyne is a semi-enclosed marine lake situated in Southwest Ireland. It is a highly sheltered, seawater lake connected to the North Atlantic Ocean, which is influenced by the warmth of the gulf stream. The tide flows from the Atlantic Ocean twice a day and fills the lough with warm sea water, this in turn creates a lake of unusually warm oxygenated seawater that is home to many different marine habitats. The Lough also has a rich and varied range of unique plants. Together with the starry night sky and the illumination of the seabed, the water of Lough Hyne comes alive with bioluminescence (emission of light by fireflies and deep-sea fishes; theirishroadtrip.com, 2023).

Method(s) of interpretation

- **Guided Kayaking Tours** are a popular form of interpretation at Lough Hyne. Experienced kayaking instructors indulge tourists in both day and night kayak tours of the Lough, providing invaluable knowledge about the history, folklore, and nature of the area.
- Both **guided and self-guided walking tours** are offered at Lough Hyne. The walk incorporates a trail through woodlands to the top of Knockomagh Hill that offers stunning scenic views of the area.
- **Outdoor Interpretation Panels** displaying photos, maps, information, diagrams, and illustrations outlining the inanimate and natural features of the area.

References and further readings

Atlantic Sea Kayaking (2022). *Night Tours*. Retrieved from https://www.atlanticseakayaking.com/night-tours/

Kearney, T. (2014). *Lough Hyne. From prehistory to the present*. Macalla Publishing.

The Irish Road Trip.(2022). *A Guide to Lough Hyne: Walks, Night Kayaking + Things to Do Nearby*. Retrieved from https://www.theirishroadtrip.com/lough-hyne/

4. 24 Good Practice – The Wild Atlantic Way (WAW) by Ursula O'Donnell

Description

The Wild Atlantic Way is a coastal touring route over 2500km long, joining up large numbers of towns and villages, attractions, and experiences along the West Coast of Ireland. The route is divided into 6 main regions and 14 stages. There are numerous discovery points along the way with fifteen of these discovery points being designated as "Signature Points" These places are especially unique and showcase both the inanimate and natural coastal landscape of the spectacular west coast of Ireland.

Method(s) of interpretation

- **Story Interpretation Panels** are located at each of the 15 "signature points". These panels offer the visitor bespoke interpretation of some of the history and heritage of the area. Each panel also includes historic or scenic images, a small motivational map and identifies some other local points of interest.
- **Photo Points** have been developed at each of the 188 Discovery Points along the WAW. These points were designed to encourage visitors to capture great photographs and to encourage them to return for another visit.
- **The Atlantic Way Explorer Mobile App** is a free app which is designed to make it easy for visitors to locate places of interest along the Wild Atlantic Way route. It is linked to google maps so visitors can see where they are in relation to sites. Visitors have the option of accessing different pages with detailed information relating to different interests they may have along with detailed information of the towns and counties located along the route.

References and further readings

Discover Ireland (2022). *Explore the epic Wild Atlantic Way*. Retrieved from https://www.discoverireland.ie/wild-atlantic-way

Failte Ireland (2022). *The Wild Atlantic Way*. Retrieved from https://www.failteireland.ie/Regional-experience-brands/Wild-Atlantic-Way.aspx#:~:text=The%20Wild%20Atlantic%20Way%20is,visibility%20within%20overseas

Ireland Highlights (2022). *Wild Atlantic Way Route*. Retrieved from https://www.thewildatlanticway.com/route/

4.25 Good Practice – Nemunas Loops Regional Park, Birstonas by Rasa Pranskuniene

Description

Nemunas Loops Regional Park was established to preserve the unique landscape, natural ecosystem and cultural heritage of Nemunas Loops and the Pinewood of Punia. One of the most beautiful scenic views open up from the observation deck on the bank of Nemunas near Balbieriškis, from the slopes of Nemunas Valley and from the mounds of Punia and Birštonas. The exposures of Balbieriškis, Siponiai and Škėvonys are truly impressive.

Method(s) of interpretation

- Based on its biological diversity, Nemunas Loops Regional Park is one of the richest protected areas in Lithuania. This is determined by the remaining large areas of ancient forests, non-straightened streams flowing through the woods, natural slopes of Nemunas valley with numerous ravines, and naturally forming islands of Nemunas River.
- The following interpretation methods are implemented: workshops, scientific experimentation, walking, observation, night tours, interactive visual activities, visits to the different protected areas and many more.

References and further readings

Birštonas Tourism Information Center (2022). *Birštonas Observation Tower*. Retrieved from https://www.visitbirstonas.lt/en/sightseeing-places/birstonas-observation-tower/

Day Trip (2022). *Nemunas Loops Regional Park*. Retrieved from https://daytrip.lt/en/objects/nemunas-loops-regional-park/

4.26 Good Practice – Cueva del Viento (Tenerife, Islas Canarias, Spain) by Elena Pérez González

Description

The Cueva del Viento is a volcanic tube located in the municipality of Icod de los Vinos, in the north of the island of Tenerife (Canary Islands, Spain). It is the largest volcanic tube in the European Union and one of the largest in the world. It is also considered to be the most complex volcanic tube in the world, due to its morphology of several levels and multiple passages. In addition to its geological value, the Cueva del Viento is also a place of great biological interest, as it is home to a wide variety of species of fauna and flora adapted to the subterranean conditions.

The complex includes other caves that are all connected to each other, such as Cueva Belén, Cueva del Sobrado, Cueva de las Breveritas and Cueva de los Piquetes. There are 7 known entrances to the complex.

Method(s) of interpretation

- The cave has several bilingual panels inside the Visitor Centre, which explain how the caves were formed and provide some information on each path which can be taken.
- The Autonomous Organisation of Museums and Centres (OAMC) of the Island Council of Tenerife offers an interpretative guided tour showing a section of one of the largest volcanic tubes in the world, which is completed with an explanation of other geological phenomena and interesting ethnographic aspects.
- The visit lasts three hours and is of medium-high difficulty.

References and further readings

Cueva del Viento (2023*). LA VISITA - El sexto tubo volcánico más grande del mundo y el más grande de Europa.* Retrieved from https://cuevadelviento.net/la-visita/

4. 27 Good Practice – Vřídlo (Hot Spring) Karlovy Vary by Liběna Jarolímková

Description

The Hot Spring "Vřídlo" is one of the major highlights in the biggest and best-known spa town in the Czech Republic, Karlovy Vary. With its 73.4 °C, it is the hottest spring not only in the spa Karlovy Vary, but in the whole Czech Republic. This nature feature releases approx. up to 2000 litres of mineral water in a second. Thanks to its high pressure, the geyser is 12 metres high. The Hot Spring is used for mineral baths and for drinking cures, in the production of Karlovy Vary spring salt and for making souvenirs.

Right under the floor of the Hot Spring (Vřídlo) colonnade visitors can visit the underground springs. Here they can see the strength of these thermal mineral springs.

Method(s) of interpretation

- The "Administration Office for Natural Healing Resources and Colonnades" prepared guided tours of Vřídlo underground. During the tour visitors learn about wild springs of thermal mineral water and production of traditional souvenirs – "stone roses". Visitors can also admire a collection of sinters and aragonites, and a clogged pipeline dated back to the beginning of the last century. Walking along the river Teplá they can see rare bacteria and algae living on the riverbed washed by hot spring water. Visitors get familiar with the history of Hot Spring (Vřídlo) Colonnade, its unique bedrock and of course with the most famous spring in Karlovy Vary – the Hot Spring (Vřídlo).

Image

Excursion route in the Hot Spring underground and a stone rose.


Source: author´s archive (*Jarolímková, 2022)*

References and further readings

Information centre Karlovy Vary (2023). Excursions. Retrieved from https://www.karlovyvary.cz/cs/podzemi-vridelni-kolonady

Information centre Karlovy Vary (2023). *Hot Spring Karlovy Vary*. Retrieved from https://www.karlovyvary.cz/en/hot-spring

4. 28 Good Practice – Coves de Sant Josep (La Vall d'Uixó, Castelló, Spain) by Isabel Maria Torres Martinez

Description

Coves de Sant Josep offers its visitors a quiet boat ride along one of the most spectacular navigable underground rivers. The visit includes an 800 meter boat ride and a 250-meter walking tour. The visit lasts approximately 45 minutes, and the cave has a constant temperature of 20ºC throughout the year. It represents the longest cavity in the province of Castelló and the second in the entire Valencian Community. It is the longest navigable underground river in Europe. The Cave is illuminated with led lights that help its conservation.

Method(s) of interpretation

- Interpretation is offered in multiple ways. Visits are generally done by boat with an interpretative guide. In addition, visitors can take the more adventurous option of kayaking down the longest navigable underground river in Europe. They can enjoy an experience that combines exploration and contemplation of the beauty of the cave's geological formations, with physical exercise. They are able to navigate through the crystal-clear waters of this cave for 2 hours, accompanied by professional guides. The length of the tour is 800 meters in single or double kayaks and 250 meters on foot through dry galleries.
- Furthermore, since 2016, there is a live music programme called Singin' in The Cave. It consists of a series of live music concerts for a reduced number of visitors.

	References and further readings
	Coves de Sant Josep (2023). *Singin' in The Cave*. Retrieved from https://covesdesantjosep.es/singin-in-the-cave-2022/ Coves de Sant Josep (2023). *The Heart of the Earth*. Retrieved from https://covesdesantjosep.es/en/

4. 29 Good Practice – Veisiejai Regional Park, Veisiejai by Rasa Pranskuniene

Description

The area of the Veisiei regional park is 12,259.12 ha. The largest lakes are Ančia, Snaigynas, Šlavantas, Verniejus. Most lakes have complex shorelines, rugged bottoms, meandering like rivers. A unique corner of nature is located between Šlavantelis and Liūnelis lakes. There is no such diversity of rare species and communities in a small area anywhere in Lithuania.

Method(s) of interpretation

- The regional park, located in the wooded and lake-like outskirts of southwestern Lithuania. You can find the educational trails with a total length of 5.3 km, you can travel by kayak and boat on the Veisiei lakes, which are connected by canals. A 30 km long boat route through nine lakes and the streams connecting them begins in Lake Snaighyna, which provides not only relaxation, but also many unexpected encounters with valuable natural objects.
- The following interpretation methods are implemented: workshops, scientific experimentation, educational trails, water educational activities, observation from tower, night tours, interactive visual activities, visits to the different protected areas and a lot more.

References and further readings

Lazdijai Tourism Information Center (2022).*Visitor Center of the Veisiei Regional Park*. Retrieved from https://www.lazdijai-turizmas.lt/en/sightseeing-places/veisiejai-regional-park/

Lithuania Travel (2022). *Snaigynas Lake and Veisiejai Observation Tower*. Retrieved from https://www.lithuania.travel/en/place/snaigynas-lake-and-veisiejai-observation-tower

4.30 Good Practice – Casa da Montanha (Mountain House) by Raquel de Meneses

Description

Situated on the island of Pico, the enormous volcanic cone of Pico is the highest mountain in Portugal. The ascent to Pico is arduous and takes about three hours (and four to descend). All climbs are monitored by Casa da Montanha (Mountain House) to ensure tourists' safety and to manage the volume of visitors. So, this is a mandatory stop. Stakes mark the trail, and when visitors arrive at the top of the mountain, they can see fumaroles; the volcano is dormant but active.

Method(s) of interpretation

- It is located at a height of roughly 1200 meters at the base of Pico Mountain, right at the limit of the by car road.
- It is possible to schedule climbs up the Pico Island peak from here, ensuring reservations and access.
- It monitories all climbs to Pico Mountain, securing visitors safety.
- It provides details on the geography, biology, history, climate, and legal framework of the Pico Mountain Natural Reserve.
- It has educational panels and movies that can be seen in the House auditorium.

Image

Casa da Montanha (Mountain House)

Source: author´s archive (*Meneses, 2023)*

	References and further readings
	OMIC | OMIC (azores.gov.pt) Furnas Microbial Observatory (azores.gov.pt)

4.31 Good Practice – Jameos del Agua (Lanzarote, Islas Canarias, Spain) by Tiziana Priede

Description

The Jameo del Agua is a tourist attraction and natural wonder located on the island of Lanzarote, in the Canary Islands, Spain. It is a natural space created by the collapse of a volcanic tube that originated about 4,000 years ago, during the last eruption of the La Corona volcano.

It is the first Art, Culture and Tourism Centre created by César Manrique, in a natural space created inside a volcanic tunnel. Inaugurated in 1968, the artist, painter and sculptor transformed the space into a unique work that represents the maximum expression of his ideology: artistic creation in harmony with the environment and nature.

In addition to its natural and architectural beauty, the Jameo del Agua is of ecological and geological importance. It is a natural habitat for a species of albino crab, which is endemic to Lanzarote, and is also of hydrological importance, as it is part of the island's groundwater filtration system.

Method(s) of interpretation

- It has an auditorium with a capacity for about 600 people, which is used for concerts and other cultural events. It also has a botanical garden with plants native to the area.

References and further readings

Gobierno de Canaris (2023). *Jameos del Agua*. Retrieved from https://www3.gobiernodecanarias.org/medusa/wiki/index.php?title=Jameos_del_Agua

Jameos del Agua (2023).Jameos del Agua. Retrieved from https://cactlanzarote.com/centro/jameos-del-agua-2/#insolita

4.32 Good Practice – Kutná Hora – Equinox by Liběna Jarolímková

Description

The cathedral of the Assumption of Our Lady in Sedlec is the oldest cathedral in the Czech Republic. The structure is oriented by its entrance to the West and by the main altar to the East. Its builders in the 13th century correctly determined the axis of the sunset to the ground plan of the cathedral and adjusted the layout of the church so that in the time of the vernal and autumnal equinox the sunbeam during the sunset falls through the biggest window in the Western front directly on the symbolic heart of a sacred building – the main altar. The current cathedral in which the game of lights penetrates with numerological and ground plan symbolism was built by architect Jan Blažej Santini, master of baroque gothic.

On the day of the equinox in March and September, the sunbeams enter the church nave through a 14m western window and slowly travel through the whole presbytery, and finally illuminate the main altar.

Equinox celebration in Sedlec cathedral is a charity evening and the money raised goes to specified social purposes in the town and its surrounding.

Method(s) of interpretation

- Visitors to the cathedral in Sedlec can witness the moment when after centuries the master architects have shaken hands with the universe, time, and light. The moment resembling a miracle comes twice a year, on the day of the vernal and autumnal equinox. The sunbeam flowing through the cathedral is accompanied by musical or other artistic productions, e.g live painting. The interpretation benefits from a strong emotional experience by linking an astronomical feature with a piece of art of the past and present.

Image

Equinox in the cathedral in Sedlec.

Source: author´s archive (*Jarolímková, 2018)*

References and further readings

The Roman Catholic Parish of Kutná Hora (2023). *Cathedral.* Retrieved from https://www.sedlec.info/en/cathedral/

4.33 Good Practice – International rowboat festival ‘Rowmania FEST’ by Valentin Niţă

Description

Festivals are universally important for their social and cultural roles and, increasingly, they have been promoted and created as tourist attractions. They are also viewed as tools in place marketing and destination image making, and are valued for their ability to animate cities, resorts, and attractions. Festivals have the ability to raise awareness and popularity of performed cultural and nature heritage. Festivals offer a forum for social interaction. Community festivals are examples of sustainable tourism practice and invite a wider audience to view and/or take part in certain cultural events.

International rowboat festival ‘Rowmania FEST’ is an initiative of Association Crisan + Caraorman + Mila 23: ‘Ecotourism for the future’ project (figure 1). The aim of this project is the development of the ecotourism destination by strengthening its own brand in the Danube Delta, by creating a common identity of the region comprising the geographical and cultural triangle of the three localities. The ideas promoted by the project, materialized in initiatives and pilot projects carried out in partnership with community members, can be assigned to various fields, relevant for the entire Delta: educational, touristic, gastronomic, economic, identity-related. The idea behind the association is the vision that the Danube Delta should be a ‘Living Delta’, i.e. an area where people live and work in close harmony with the environment. The association promotes the idea of supporting a sustainable and growing local economy that includes all stakeholders in the planning process (local people, authorities, business environment).

Method(s) of interpretation

- ‘Rowmania’ (figure 3) is derived from the English expression ‘rowing mania’, which translates into a passion for rowing, and which is also related to the name of the country – Romania. In order to bring people closer to nature and to help them understand and love the Danube Delta, the project essentially makes use of a tool – canotca which implies a key activity, rowing. The two paddles that form part of the two letters ‘W’ and ‘A’ in

‘Rowmania’ represent what the project stands for: rowing and water. Water is the key element, the ‘fuel’ which, together with the paddles, moves the canotca. It is the vital resource for all species, a gastronomy ingredient, as well as home to Danube’s mythical creatures.

- Canotca (figure 2) is a combination of ‘lotca’ (an old fishing boat) and a canoe (sports boat). Also known as the “water bicycle”, it symbolically brings together the identity of the place in a symbolic product of nature – the tree, reinterpreted through culture – the craft. From this point of view, Rowmania may be regarded as an attempt to reintroduce man to nature in a safe and respectful manner.
- The English term ‘edutainment’ may be used to summarize the festival’s concept: it is a combination of education and fun. The campaign appeals to people’s emotions by using representative images and simple language to describe nature and other elements in order to motivate people to adopt a positive attitude and to act as such. For example, the canotca is described as ‘agile, light, and ready to conquer hearts.
- The first edition of the festival was held in 2011 (2 – 4 September). The main feature of the program was diversity: there were concerts in the evenings, there was a fare focused on investment projects dedicated to the Sustainable Development of the Danube Delta, canotca – “the water bicycle” – testing was open to everyone, canoe contests, canotca and other types of boats tours meant to help participants understand and to provide a practical experience of “slow tourism”.

  In the following years, the festival grew and diversified; it reached the point where it held gastronomic events, photography exhibitions, fishing competitions, and other events meant to promote ethnic, linguistic, and cultural diversity, traditional workshops, educational workshops for children (drawing, music, photography, canotca design and construction), sports competitions (triathlon), movie watching, conferences.

Image

International rowboat festival 'Rowmania FEST'

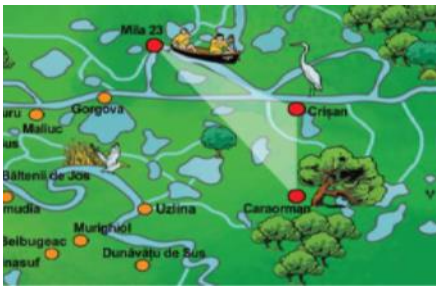

Figure 1.

Triangle Caraorman – Crişan – Mila 23

Figure 2.

Canotcas

Source Figure 1: Source: Crișan - Caraorman - Mila 23. Ghid De Mândrie Locală Pentru Elevii Din Delta Dunării, 2016

Source Figure 2: Raluca Munteanu, www.turismlent.ro

***Figure 3**: ROWMANIA, Source: Grigore, A., 2013*

Figure 4.

Poster with first edition

Figure 5.

Theme poster "Caravan of the united waters of Romania"

Source Figure 4, 5: https://rowmania.ro/rowmaniafest/

References and further readings

Andersson, T. D., & Getz D. (2008). Stakeholder Management Strategies of Festivals. *Journal of Convention, Event Tourism*, *9*(3), pp. 199–220.

Asociația Ivan Patzaichin – Mila 23 (2023). *Rowmania FEST 10*. Retrieved from https://rowmania.ro/rowmaniafest/

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Sandberg, E. (2020). *Nature interpretation in the nordic countries - a book about experiences, learning, reflection and participation then people and nature meet*. Nordisk Ministerråd.

4. 34 Good Practice – Luhačovice spa – artistic interpretation of mineral springs Liběna Jarolímková

Description

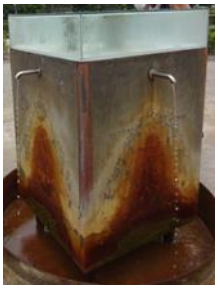
Luhačovice is one of the most important spas in the Czech Republic. Their mineral springs used for therapeutic purposes belong to ones of the most efficient mineral springs in Europe. Mineral waters in Luhačovice have a high volume of minerals and free carbon dioxide. Their temperature oscillates between 10 and 14°C. They are used for drinking cures, inhalation procedures and carbon baths. The waters help in cures of the respiratory tract, organs of motion, circulatory system, diabetes and recondition after oncological treatment. The total number of mineral springs used for balneological treatment is 17, they are mostly located in the spa park, covered with pavilions or a colonnade and they are accessible free of charge. The spring called Nový Jubilejní has a drinking fountain in the shape of a salt crystal.

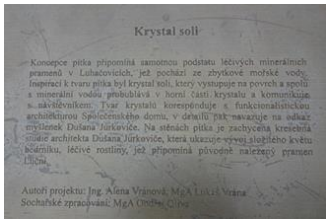
Method(s) of interpretation

- **Interpretation in the form of a piece of art** is used with a drinking fountain installed at Nový Jubilejní spring. The drinking fountain has a shape of a salt crystal since local mineral springs contain a lot of salt and according to a legend about salt columns hidden in the underground, it symbolically raises above the ground. The upper part of the block is formed by a glass container under which the water is sprayed and thus brings motion into the whole composition. The block walls are decorated with flower motifs based on the original name of the spring – "Meadow spring". The motif decorating the walls are blossoms of a Pimpinella saxifrage which became the basic motif and inspiration for Jurkovič´s architecture in the spa Luhačovice. The author of this drinking fountain is the sculptor Ondřej Oliva.

Image

Interpretation of mineral water through artistic drinking fountain and explanation





Source: author´s archive (*Jarolímková, 2019)*

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4.35 Good Practice – Elbe (Labe) spring by Liběna Jarolímková

Description

The spring of the Elbe can be found at the top of the Krkonoše mountain ridge (1 387 m. n. m.) on Labská meadow (CZ). The length of the whole river running through the Czech Republic and Germany is 1 154 km. It is a symbolic ring reservoir as the real spring spews several tens of metres further, also on Labská meadow, but it is closed for visitors because of nature protection.

Method(s) of interpretation

- Interpretation is in the form of a piece of art. There is a stone wall decorated with coats-of-arms of 28 major towns situated along the river from this spring to the North Sea and a wooden statue of a girl so-called Allegory of Water standing nearby. The statue was erected here within a Czech-German project called "I praise you, Elbe".

Image

Elbe (Labe) spring

Source: author´s archive (*Jarolímková, V., 2022)*

References and further readings

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4.36 Good Practice – The Wild Kitchen by Aisling Ward

Description

The Wild Kitchen – A house and garden on the west coast of Ireland with guided wild food walks on the land and seashore of the Burren and Cliffs of Moher Geopark. A sustainable interactive tourism encounter in which the guest co-creates this sensory experience. Its educational focus is on the interpretation of the natural heritage of the Burren and Cliffs of Moher Geopark while also providing Leave No Trace guidelines to guests during the visit.

Method(s) of interpretation

- Interpretation is all about an educational experience on the wild edible delights of the region and engaging the senses.
- Wild food taster walk – Seaweeds. A guided walk in which the visitor learns about edible seaweeds, identifying them when in season, preserving the seaweed and eating them while on a picnic.
- Wild food courses – edible plant identification in the Burren, seasonality, sustainable harvesting, and the historical and nutritional use of wild native food.
- Wild Kitchen Booklet – weatherproof, lightweight and includes photos, descriptions, and recipes for 26 beautiful wild plants within the Burren Geopark and along the Irish Coast enabling the user to self-guide.
- Seasonal seaweed workshops – Cookery workshops on recipes using the wild local ingredients.

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4. 37 Good Practice – The Cuevona de Cuevas del Agua by Luis LaCalle

Description

Cuevas del Agua in Asturias, Spain is a very interesting cave because it covers a local road, so visitors can explore it on foot or in their vehicles. It forms a kind of natural tunnel and is 300 meters long.

It has excellent formations, and it is a very popular attraction for young children and school visits, as due to its accessibility, it provides an excellent opportunity for children to make their first visit to a cave

It is located very close to Ribadesella, in Asturias, Spain, and being in the middle of an area of great natural beauty, it is not necessary to make any prior reservation or pay to enter.

Method(s) of interpretation

- It is advisable to visit this cave on foot. On both sides of the cave there are places to park cars, and the visit on foot is attractive. In addition, in one of the tunnel-cave exits, there is a small town (Cuevas del Agua) in which no more than 50 inhabitants live, and can be considered a complementary visit to the cave.
- Visitors are warmly welcomed in the town, which provides tourist information, and there are a number of shops selling typical Asturian products.

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4.38 Good Practice – Museum – Danube Delta Eco-Tourism Museum Centre by Gina Ionela Butnaru

Description

Museums are social institutions, in charge not only of preserving our heritage but also of disseminating it. According to the International Council of Museums (ICOM), they fulfil four functions: documentation, conservation, research, and dissemination. "*A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment*" [ICOM, 2004].

The Danube Delta Eco-Tourism Museum is located in the county residence city – Tulcea, close to the waterfront and not far from where tourists go aboard ships for Delta Danube tours.

Conceived as a complex cultural institution – museum and public aquarium, the Danube Delta Eco-Tourism Museum Centre is the result of the joint efforts of the Tulcea County Council and the Eco-Museum Research Institute Tulcea, in the frame of a project developed through the Neighbourhood Programme Romania-Ukraine (PHARE CBC 2004–2006). It was opened for the public on 25 February, 2009.

Method(s) of interpretation

- The experience of visiting a museum - to the large majority of the public, the experience of visiting a museum consists of walking from room to room, admiring the works and reading the details about the works and their authors, sometimes complemented by a brief description of the work that most visitors overlook in their eagerness to get through the entire collection. The experience of visiting the museum rather focuses on the quantity of works seen than on the amount of time devoted to appreciating the qualities of the collection. As a result, the experience is aesthetical rather than educational.
- The museum hosts a series of permanent exhibitions displaying the nature heritage of the Danube Delta Reservation as well as the beauty of other neighbouring protected areas, located in the Dobrogea plateau, i.e. an

aquarium, as well as some temporary exhibitions aimed at displaying the variety of Delta-specific habitats. The permanent exhibition displays the rich biological diversity, plants, reptiles, mammals and birds in various stages and moments of their life cycle. Also, the museum offers visitors the opportunity to identify country and European-level-protected bird and animal species as well as extinct floral or/and animal species of the region. The visiting tour includes screens on which tourists can watch videos about birds' and animals' life in the region.

- The aquarium is equipped with modern installations and it has a stocking capacity of 150 tones of water. It shows a collection composed of 24 indigenous species of fish from the Danube Delta and the Black Sea, 23 reef species of fish, 8 marine species of intervertebrates, displayed in a public space.
- The museum also provides a play ground for young children, Internet access, computer programmes, and a welcome room. It also provides easy access for disabled persons, elevators and facilities. At the exit, the visitors have the possibility to acquire various souvenirs like postcards, albums, maps, small artefacts, or artisan objects made by the Delta's inhabitants.

Image

Figure 1.
Danube Delta Eco-Tourism Museum Centre

Figure 2.
Reproduction of habitat

Figure 3.
Aquarium

Figure 4.
Reproduction of habitat

Source: https://www.romanianresorts.ro/centrul-muzeal-ecoturistic-delta-dunarii

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4. 39 Good Practice – Water of the Earth by Liběna Jarolímková

Description

One part of a garden exposition at the Museum of records and curiosities in Pelhřimov (CZ) is a giant stainless funnel. It is 225 cm high, and the diameter of its upper part is 207 cm. Water from all places of the world is collected into this funnel. The funnel is a symbol of "Water of the Earth" project and symbolizes connecting water from all over the world and connecting people participating in the project.

Method(s) of interpretation

- Happening "Water of the Earth" of the Museum of records and curiosities started in and has continued ever since. Its goal is to highlight the attitude of our civilisation to the environment, particularly to water. Water samples are poured together into the biggest funnel in the world and on festive occasions the water is released into the river Bělá. 876 samples of water from 74 countries (from the Himalayan foothills, mythical mountain of Ararat, Vietnamese river Vietkong – just to name at least a few of them) have flown through the funnel and later through the town Pelhřimov so far. Anybody who brings or sends a sample of water to the museum can participate in the record trial.

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4.40 Good Practice – Thematic trails – Danube Delta by Maria Tătăruşanu

Description

A nature trail is a short, often loop-type trail (starting and finishing at the same point) which has been made specifically to interpret the nature of an area. The design of the trails is influenced by: The respect for wildlife habitats and wildlife movements; Available budgets: length of trails and quality of materials used; In order to provide high-quality experiences to different types of visitors, it is advisable to create a network of trails with different lengths and degrees of difficulty; Trails can be developed according to specific interpretation themes; conservation of wildlife and plant life, human impact on nature, soil and geology, water and wetlands. Usually, thematic trails are part of the so-called interpretation infrastructure and are most often displayed on informative billboards along visiting paths. However, the Delta rarely provides walking possibilities and therefore, the classical ”path” takes a different meaning.

Method(s) of interpretation

- **Water ‘trail’** – descriptive communication (particularly through panels/ billboards) is not always possible and therefore, the use of printed materials, such as brochures, become a necessity. Also, under such circumstances, the use of the audio-guide can be extremely useful. Additionally, the rules and regulations for plant and animal protection as well as tourist security imply the presence of a guide. Therefore, given the Delta tourism particularities, guided tours are retained. Moreover, there are some additional requirements that the Delta guides need to meet. Guides must be familiar with the natural environment and the visited sites (local culture, toponymy, landscape). Also, they must be able to mediate tourists’ interaction with the destination. Interpretation techniques must be adapted to the tourists’ specific activities and interests. As far as plant and animal species are concerned, guides should know their scientific as well as popular names in the language in which the tours are provided. By practicing slow speed tourism by canotca, tourists can explore the biological diversity of the Delta. The trail takes about 4–5 hours

while, with the support of an audio-guide, tourists have the opportunity to understand details related to the local flora and fauna. The departure is from Rowmania Crisan Eco-tourism Centre (figure 1), a place where the traditional architecture is wonderfully displayed with reed roof and wattle-surrounded houses; the trail continues on the smooth waterways near Crisan village, towards Lake Iacob where various bird species and other Delta-specific biodiversity may be admired. Visitors are provided with an audio guide that includes the sounds of the most common birds living in the delta and a brochure containing additional information about the local community and the birds of the Delta. Given the specificity of the visited area (the Danube Delta), sensorial communication is essential. Although nature is an infinite source of perceptions and sensations, people are rarely accustomed to using all their senses in the learning process.

Main conclusion: thematic trails are combined with guided tours (non-personal interpretation is combined with personal interpretation).

- **Natura Trail Sfântu Gheorghe (Saint George)** – The Biosphere Reservation Danube Delta – The theme of this trail is Experiencing Nature between River and Sea. Well-built thematic trails can become valuable tools for environmental education, for outdoor lessons and interactive trips. Clear and to-the-point information, able to stir interest can definitely have a positive impact on visitors' behavior. By raising visitors' awareness, education in and through nature can add value to protected areas, thus leading to a better understanding of the increasing importance of environmental protection and to active involvement in biodiversity preservation and, moreover, to a more rational use of resources and awareness of humanity's impact on this planet. Additional information: Length of trail: 6 km; Difference of level: 0 m; Average duration: 3 hours Year of construction: 2009; The trail is equivalent to: Road trail D8; Target audience: general Guided tour: yes,

  available activities: Hiking; Cycling; Wildlife observation/ watching; Bird watching. Items to be considered include shelters, benches, litter bins,

signposts, steps, culverts, bridges, picnic sites, toilets, interpretive panels, and safety barriers.

The outdoor panel (figure 2) displays the thematic trail in the Danube Delta departing from Sfantu Gheorghe (Saint George). The panel is bilingual (English and Romanian). The information on this panel provides details on the bird and plant species that tourists will encounter.

Image

Figure 1.

Rowmania Crisan Eco-tourism Centre

Figure 2.

Outdoor panel

Source: https://www.totb.ro/primul-traseu-tematic-pe-apa-cu-audioghid-din-Romania;

Source:https://asociatiaaer.ro/Publicatii/Poteci%20tematice%20in%20ariile%20protejate%20din%20Romania.pdf

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4.41 Good Practice – Planetarium Trail by Liběna Jarolímková

Description

The Planetarium trail is a type of heritage trail representing a model of our Solar system. There are several Planetarium trails in the Czech Republic now e.g., in Hradec Králové, in Vestec, in the vicinity of the village Potštejn, and near the town Proseč. The trails help people form an idea about the size of bodies and distances in the universe.

Method(s) of interpretation

- The most detailed model of the solar system can be found at the Planetarium trail in the valley along the river Vltava in the Northern surroundings of Prague. The trail shows the model of the solar system at a scale of 1:1 000 000 000. It includes 34 cosmic bodies at 17 stops. Visitors will find here the Sun, planets, big moons, and dwarf planets. Each body is represented by a ball made of stainless steel (only the Sun is made of concrete) billion times smaller than the real body itself and even the distances between them are diminished in the correct ratio.
- The trail is eqipped with information panels with a brief description of each body.

Image

Planetarium Trail

Source: author´s archive (*Jarolímková, 2023)*

Planetarium Trail

Source: author´s archive (*Jarolímková, 2023)*

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Hvězdárna a planetárium v Hradci Králové (2023). *Planetarium trail Hradec Králové*. Retrieved from http://www.astrohk.cz/planetarni_stezka.php

4.42 Good Practice – Walks with Pius by Aisling Ward

Description

Walks With Pius – Unique Guided walks in the Burren Geopark and Inisheer Island by local guide, Pius Murray.

Pius has an intimate knowledge of the nature heritage and inanimate nature of the region which he shares with the visitor through a spiritual journey. At its most fundamental, this is a guided walking tour through nature however, the warmth and expertise of Pius creates a unique experience which allows the visitor to explore the stunning, unique and karst landscape of the Burren and along the Wild Atlantic Way.

Method(s) of interpretation

- Ireland has a rich and varied culture of storytelling and this as an interpretation method is interwoven into all methods of communication provided by Pius.
- Folklore surrounding the 'Place', its heritage, culture, and history are shared with the guest as they ramble through the unique Burren Landscape.
- Stories regarding the traditions and spirituality provided through nature are regaled in a light-hearted and often humorous manner.
- Nostalgia is often weaved into interpretation evoking memories from the past aroused through the senses.
- Pius researches extensively the stories and legends about the people and the community present and past and shares these with the visitor thus bringing what is often described as barren, to life.

Image

Source: author´s archive (*Jarolímková, 2022)*

References and further readings

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4.43 Good Practice – Hydropolis Wroclaw by Liběna Jarolímková

Description

Everything starts with water...

The Municipal water and sewage company (MPWiK) in Wroclaw (PL) is 150 years old. It provides a supply of drinking water to 700 thousand inhabitants of Wroclaw and the surrounding areas. The MPWiK is known for protection of the environment and development of activities focused on the improvement of environmental awareness. In 2015 they opened Hydropolis – an ecological educational centre devoted to water.

Hydropolis is situated in a historical neogothic underground pool of Wroclaw waterworks, ceasing operation in 2011.

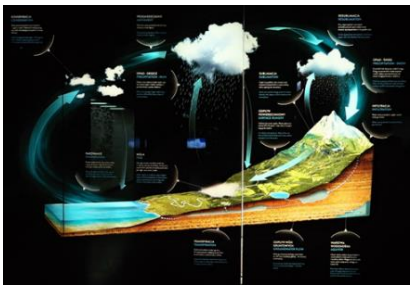
The exposition presents processes where water is engaged, e.g. function of water in the human body, life in the water, sea water circulation influencing the climate on the Earth, types of clouds, water engineering, and water transport.

Method(s) of interpretation

- The visitor centre accommodates a large complex exhibition divided into 7 zones which represent water in all its aspects. Tens of multimedia and interactive installations, models, touch screens and other tools help visitors understand the circulation of water in nature, life in oceans, clouds, the importance of water for the life of the human body, utilization of water for various purposes, etc.
- Visitors can use an audio guide.
- Besides exhibition activities Hydropolis provides a large offer of educational programmes and specifically oriented workshops.

Image

Hydropolis Wroclaw. ***Hydropolis Wroclaw – model koloběhu vody.***



Source: author´s archive (*Jarolímková, 2022)*

Hydropolis Wroclaw – vodní toky.

Source: author´s archive (*Jarolímková, 2022)*

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4.44 Good Practice – Visitor Centers – Sulina Tourist Information Centre by Elena Ramona Ciortescu

Description

Sulina Tourist Information Centre

A visitor centre is a building which is open to the public providing, apart from information, also interpretation about the (protected) area, usually located within or close to that area. The definition "Visitor Centre" refers to any kind of organized service with front-desk activities, the main purpose of which is to facilitate the presentation and appreciation of UNESCO designated sites.

According to UNESCO, Visitor Centres have multiple functions depending on their development and management.

Sulina tourist information centre (Figure 2) is meant to welcome visitors and to encourage them to explore the Danube Delta and the town. Sulina tourist information centre is part of the network of visitor centres existing in Danube Delta Biosphere Reserve (Figure 1): Tulcea, Sulina, Crişan, Chilia, Murighiol, Sfântu Gheorghe, Gura Portiţei.

Method(s) of interpretation

- The interpretation theme is focused on two subjects: (1) the story of the Black Sea bio-geographical region, of its flora, fauna, and geology; (2) man's relation and interaction with the local wildlife and scenery. As far as education is concerned, the centre organizes and runs activities meant to inform and raise awareness among tourists as well as artistic events and workshops focused on the bio-diversity of the Danube Delta Reservation. The great advantage of these centres is the fact that they can provide interpretation all year long.
- Educational activities: provide a learning experience on the protected area and can as well support tourism development and education in the region. Students are provided with audio and video materials, PowerPoint presentations; moreover, they get the opportunity to go sightseeing and watch birds to identify and admire protected plants.

Image

Figure 1.
Visitor Centers Danube Delta

Figure 2.
Information Center Sulina Town

Source: https://ddbra.ro/centre-de-informare-si-educatie-ecologica/

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4.45 Good Practice – Algar do Carvão by Raquel de Meneses

Description

This volcanic chimney is remarkable because, in contrast to other instances, it is not entirely blocked. It concludes 90 meters below the surface in a lagoon with clear water. There are only two visitable volcanic chimneys in the world, Algar do Carvão is one of them. Inside the cave, there are several staircases leading to various balconies, totaling 338 steps. Since the 1960s, it has been accessible to the public, being maintained by the Association "Os Montanheiros". The water dissolves and becomes enriched with silica and ferric minerals as it percolates through the rocks and slag. In the vaults, interior walls, and floors as it is released and precipitates into the lagoon, it leaves behind minerals in the form of milky white amorphous silica stalactites and stalagmites or reddish ferric veins, some of which produce limonite deposits through oxidation. Due to its excellent acoustics, it has hosted a variety of performances over the years, as well as religious and cultural events.

There is also an interpretative centre to provide information about the site, warn about inappropriate behaviour and the need to conserve the site and give indications to ensure safety. The interpretative centre is harmoniously integrated within the landscape.

Method(s) of interpretation

- There are no official tour guided visits. Numerous guides are dispersed throughout the area, helping, responding to inquiries, and preventing risky or intrusive behaviour.
- Visitors can explore the volcanic chimney at their own pace, taking as much or as little time as they like to observe and ascend the stairs.
- A small interpretative centre introduces visitors to the thematic.

Image

Algar do Carvão

Source: author´s archive (*Meneses, 2023)*

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Mendes, C., & Dias, E. (2009). Characterisation of Algar do Carvão mire in Terceira island (Azores). *Portugaliae Acta Biologica*, *23*(1/4), 1-13.

4.46 Good Practice – Falkensteiner – a responsible approach of hotel management to water by Liběna Jarolímková

Description

The Austrian hotel company Falkensteiner is known for a responsible approach to the protection of the environment. Their services are related to water, most of their hotels are situated in the vicinity of water – lakes, rivers, mineral healing springs, or the sea and therefore they aim is a strong emphasis on its protection and economizing on water.

Method(s) of interpretation

- Their hotels introduced sensitive economizing on water with the aim to decrease water consumption.
- Resort Punta Skala has its own purification plant for drinking water and sewage purification. Sea water is purified, used, and purified again before it returns back to the sea.
- Hotel Falkensteiner Balance Resort Stegersbach catches rainwater on the roof and uses it to water their own permaculture garden (the biggest hotel permaculture garden in Austria).
- Programs of sea biology are implemented in the hotel Diadora in Choatia. Here children learn about sea wilflife and why it is important to keep oceans clean, all in a playful way.
- In the hotel in Montafon, ecological edification is focused on water energy. In hotel science labs or during excursions to illwerke vkw and water reservoirs children learn how electricity is generated from water and why unspoilt and clean nature are so important.

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4.47 Good Practice – Dessau-Wörlitz Garden Realm, Germany by Valerie Isabel Elss

Description

The Dessau-Wörlitz Garden Realm (Gartenreich Dessau-Wörlitz) was designated as UNESCO World Heritage Site (UNESCO, 2021b) in 2000. Representing an exceptional example of landscape design during 18th century Enlightenment, the Dessau-Wörlitz Garden Realm occupies approx.150 square km. The design of the parks and gardens was based on the English model and accompanied by subtly transformed agricultural areas and rivers and lakes lined with ancient-style temples (UNESCO, 2021b). Over time, it has become a pilgrimage destination and a model for many other landscape gardens (cf. Kultur Stiftung Dessau Wörlitz, 2021). A significant feature of the Dessau-Wörlitz Garden Realm is the cross-epochal interconnection of Wörlitz Park with older cultural landscape sites in Oranienbaum and Dessau-Mosigkau. Art, culture, and nature are linked in a uniquely harmonious way (Kultur Stiftung Dessau Wörlitz, 2021).

Method(s) of interpretation

- Guided Tours (e.g. costume tours)
- Gondola ride
- Wörlitz Lake Concerts
- Guided cycling tours

Image

Dessau-Wörlitz Garden Realm, Germany

Source: *pixabay.com (2023)*

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4.48 Good Practice – Muskauer Park, Germany/Poland by Valerie Isabel Elss

Description

Since 2004, Muskauer Park has been listed as a joint Polish-German heritage site within the UNESCO World Heritage Site (DUKO, 2021a). The Park covers a landscape created between 1815 and 1844 by Prince Hermann von Pückler-Muskau on his estate. The construction of the park was continued by his scholar Eduard Petzold (DUKO, 2021a). The approximately 700 ha park consists of the castle, bathing, and mountain park on the German side, as well as the sub-park, the arboretum and the Braunsdorf fields on the Polish side (DUKO, 2021a). Various sustainability-related projects are being implemented in the park (e.g. in relation to the integration of historical-cultural landscape features, protection, development, and promotion of European cultural heritage; cf. "Fürst-Pückler-Park Bad Muskau" Foundation, 2021).

Method(s) of interpretation

- Exhibitions
- Visiting the castle nursery
- Guided tours
- Children's birthdays parties
- Muskau forest railway, carriage rides, etc.

	Image
	Muskauer Park, Germany/Poland  Source: author´s archive (Jarolímková, *2013)*
	References and further readings
	DUKO (2021a). UNESCO-Welterbe – Gartenreich Dessau-Wörlitz Philosophisch-politisches Gartenkunstwerk. Retrieved from https://www.unesco.de/kultur-und-natur/welterbe/welterbe-deutschland/gartenreich-dessau-woerlitz "Fürst-Pückler-Park Bad Muskau" Foundation Muskau Park Tourist Centre (2021). Exhibitions. Retrieved from https://www.muskauer-park.de/en/visit "Fürst-Pückler-Park Bad Muskau" Foundation Muskau Park Tourist Centre (2021). *Landscape Art*. Retrived from https://www.muskauer-park.de/en/

4.49 Good Practice – Palace and gardens of Schönbrunn by Valerie Isabel Elss

Description

The palace and gardens of Schönbrunn were listed as a UNESCO World Heritage Site in 1996 (UNESCO, 2021c). The palace was the residence of Habsburg emperors from the 18th century until 1918. Together with its gardens, where the world's first zoo was established in 1752, it is a remarkable Baroque ensemble and a perfect example of a synthesis of the arts (UNESCO, 2021c).

Method(s) of interpretation

- Virtual tour of the park
- Maze, labyrinth & Labyrinthikon (playground) for children
- Guided tours
- Others

Image

Palace and gardens of Schönbrunn

Source: author´s archive (Jarolímková, *2018)*

References and further readings

Schloß Schönbrunn Kultur- u. Betriebsges.m.b.H. (2023). *An Authentic Experience Of Imperial Heritage.* Retrieved from https://www.schoenbrunn.at/en/

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4.50 Good Practice – Schwerin Palace Garden by Valerie Isabel Elss

Description

Originally laid out as a pleasure garden based on a French model, the Schwerin Palace Garden began to transform in 1748. Garden architect Jean Legeay chose the cross channel to be the centre of the garden, surrounding it with sculptures from the workshop of the Saxon court sculptor Balthasar Permoser (Landeshauptstadt Schwerin, 2021).

A further extension took place around the middle of the 19th century when the castle garden was redesigned by Peter Joseph Lenne. The basic baroque structure was preserved, while the adjacent surroundings, the greenhouse garden, kitchen gardens and the riverbank zones were landscaped according to the English model. Today, the park covers an area of about 25 ha (Landeshauptstadt Schwerin, 2021). Since 2014, the Schwerin Residence Ensemble has been on Germany's list to apply for the title of UNESCO World Heritage Site (Welterbe Schwerin Förderverein, 2021).

Method(s) of interpretation

- Guided tours
- Gourmet Garden
- Others

Image

Schwerin Palace Garden

Source: author´s archive (*Elss, 2021)*

References and further readings

Landeshauptstadt Schwerin (2023). Parks And Gardens Of Schwerin. Retrieved from https://www.schwerin.de/en/visit-schwerin/attractions/parks-and-gardens/

Welterbe Schwerin Förderverein (2021). Akzeptanz & Begeisterung für das Residenzensemble. Retrieved from https://www.welterbe-schwerin.de/projekt

4.51 Good Practice – The botanical garden of Padua by Valerie Isabel Elss

Description

The botanical garden of Padua (Italy) has been a UNESCO World Heritage Site (UNESCO, 2021d) since 1997. Created in 1545, it is the first botanical garden in the world, and it still features its characteristic circular layout, symbolising the world and is surrounded by water (UNESCO, 2021d). Subsequently, other elements were added (pumping stations, ornamental walkways, etc.).

Today, the botanical garden has a high scientific value (experiments, education, architecture, etc.). Its herbarium and library remain among the most important in the world (UNESCO, 2021d).

Method(s) of interpretation

- **Educational workshops:** The workshops show an interactive playful-educational approach targeting different age groups and school levels (University of Padova, 2021). The laboratory and educational activities include a variety of topics, (botany, cultivation and different uses of plants, biodiversity, ecology, and climate). The children should be able to meet, use and represent plants (University of Padova, 2021a).
- **Guided tours:** There are several thematic itineraries available ("The Old Botanical Garden": oldest species in the hortus simplicium; "The Biodiversity Garden": 1,300 plant species; "Plants and Humankind": plants in their daily relationship with humankind; "Plants and the Environment": "virtual journey from the Equator to the Poles to discover the ecosystems and associated plant species"; University of Padova, 2021b).

References and further readings

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University of Padova (2014). Over 6,000 Plants. Retrieved from https://www.ortobotanicopd.it/en

4.52 Good Practice – The Palaces and Parks of Potsdam and Berlin by Valerie Isabel Elss

Description

In total, the park complex covers about 500 ha featuring 150 buildings, which were built between 1730 and 1916 (UNESCO, 2021e). These include more than 30 palaces and parks (Stiftung Preussische Schlösser und Gärten Berlin-Brandenburg, 2021). This ensemble of palaces and parks has its origins in the work of the most important architects and landscape gardeners of their time in northern Germany such as G. W. von Knobelsdorff (1699–1753), C. von Gontard (1731–1791), C. G. Langhans (1732–1808), K. F. Schinkel (1781–1841) and P. J. Lenné (1789–1866). The cultural landscape with its parks and buildings was laid out between 1730 and 1916.

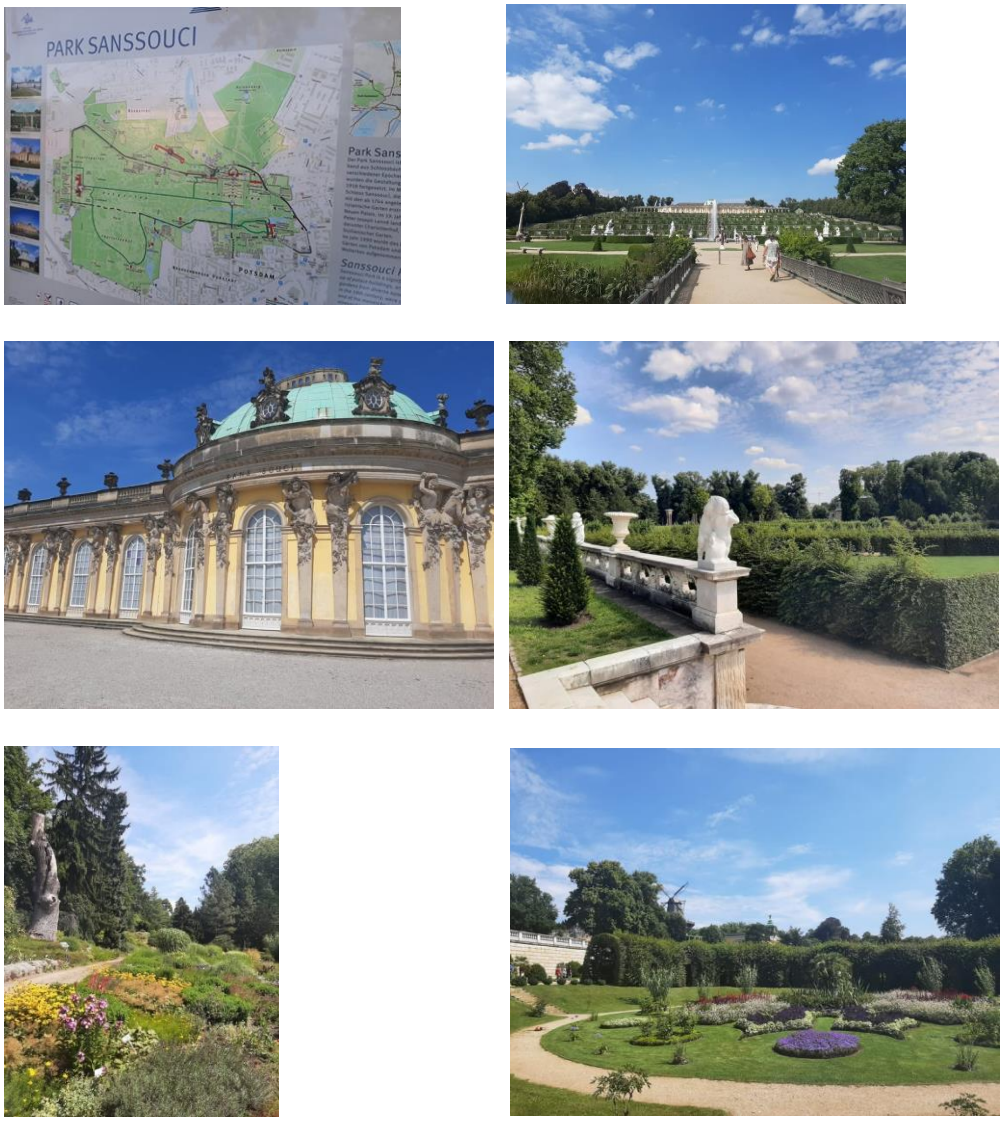
Method(s) of interpretation

- **Family & children:** One of the main target groups of the Palace Ensemble are families. Special events for this target group are held regularly. These include workshops and guided tours, as well as fairy tale festivals, rallies, Sunday fairy tales, etc. Children's birthday parties with different themes (e.g. "Haunted Castle") can be celebrated in Sanssouci Park. In addition to that, family (guided) tours are possible. This also relates to free offers: Audio guides with palace stories for children, playful tours with puzzle questions (7–12 years-old) and digital park games (aiming at families with children from 6 years) via the free app "Actionbound" (Stiftung Preussische Schlösser und Gärten Berlin-Brandenburg, 2021).
- **Visitors with special needs:** Visitors with special needs are offered a recommended route through Sanssouci Park. This has been developed for visitors with mobility impairments as well as blind and visually impaired visitors. Granting barrier-free access to historical architectural and garden monuments is one of the explicit goals of the Stiftung Preussische Schlösser und Gärten Berlin-Brandenburg (2021).
- **Digital offers:** A virtual tour is available and digital exhibitions can be visited at Google Arts & Culture. Current special exhibitions are introduced

in film clips. Various YouTube contributions offer exclusive glimpses behind the scenes (e.g. “Everyday Stories from the Palace Gardens”). Sanssouci Palace, the Picture Gallery and the New Chambers of Sanssouci can be explored online. Furthermore, explorations are enhanced through Google Street view or the “digital collection” (including Berlin clocks; Stiftung Preussische Schlösser und Gärten Berlin-Brandenburg, 2021).

Image

The Palaces and Parks of Potsdam and Berlin



Source: author´s archive (*Elss, 2021*

References and further readings

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UNESCO (2021). Palaces and Parks of Potsdam and Berlin. Retrieved from https://whc.unesco.org/en/list/532/

4.53 Good Practice – Externsteine – "Media X" by Liběna Jarolímková

Description

The Externsteine, situated in the Teutoburg Forest in Germany, are a monumental group of sandstone rock towers and blocks belonging to the most spectacular nature and cultural monuments in Europe. They started to form approx. 130 million years ago as a result of a shift of an Earth layer 80 million years ago, when enormous pressure forces gradually folded layers of sandstone into a vertical position.
This gave rise to the Teutoburg Forest with Externsteine. In the course of millions of years spring streams washed the mountain ridge and the Externsteine remained as an isolated group. The rocks are 40m high, shaped by water and wind into bizarre shapes. The place has fascinated people since time immemorial. Pagan and Christian worships were held in the vicinity of the Externsteine in ancient times.

Method(s) of interpretation

- The visitor centre offers information about nature and cultural history of the Externsteine. The highlight of the exhibition is an interactive shining panel "Media X" (the name comes from the letter X in the name of the EXternsteine) with animation of the geological process explained through augmented reality. The centre also offers historical photo and film documentaries and short explanations showing the whole scale of nature and cultural history of this site.
- The centre also offers guided tours and various programmes for individual experiences in the nature, e.g. Magic of the Externsteine – Path of meditation.

Image

Externsteine ***"Media X"***

Source: author´s archive (*Jarolímková, 2012)*

References and further readings

Landesverband Lippe (2023). *Die Externsteine.* Retrieved from https://www.externsteine-info.de/

4.54 Good Practice – Capelinhos Volcano Interpretation Centre – CIVC by Raquel de Meneses

Description

The Capelinhos Volcano Interpretation Centre is a museum located on the island of Faial in the Azores, Portugal.

The museum is dedicated to the history and science of the Capelinhos volcanic eruption, which occurred in 1957 and was one of the largest and most explosive eruptions in the Azores in the 20th century.

The interpretation centre provides visitors with a detailed understanding of the volcanic eruption and its effects on the local community and environment, through interactive exhibitions and multimedia displays.

The centre also provides information on the geological and volcanic history of the Azores and the role of volcanoes in shaping the islands and their ecosystems. In addition to the museum, the center also offers guided tours of the volcanic area and opportunities to learn about the nature and cultural heritage of the region.

Method(s) of interpretation

- Permanent exhibition space consisting of videos, photos, and photograms with information in Portuguese and English.
- Interactive exhibitions, including videos that showcase a reenactment of the Capelinhos eruption and the expansion of the island.
- Architecturally integrated centre within the landscape (underground constructed), respecting the environment created by the volcanic eruption. It is a spacious, modern building that uses new sound and image technologies to make heritage interpretation more accessible and efficient for all visitors.
- This Centre is educational and informative, based on factual scientific knowledge.
- Tour guides at the centre are local residents with excellent educational backgrounds, which greatly enhance the emotional connection of the visit. When discussing the impact of the volcanic eruption on the community, the guides bring a personal touch to the experience, making the interpretation more grounded and tangible as it is based on real individuals and their real-life stories.

Image

Capelinhos Volcano Interpretation Centre - CIVC

Source: author´s archive (*Meneses, 2023*

References and further readings

Arquitectura Viva (2023). *Volcano Interpretation Center in Capelinhos*. Retrieved from: https://arquitecturaviva.com/works/volcano-interpretation-center-in-capelinhos

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4.55 Good Practice – Casa dos Vulcões (Volcanoes' House) by Raquel de Meneses

Description

The Volcanoes' House is an interpretive centre framed in the protected landscape of vine culture of Pico island, integrated in the Lajido of Santa Luzia.

The Volcanoes' House offers an authentic journey to the center of the Earth using an interactive dome, along with a very dynamic presentation and a variety of tools.

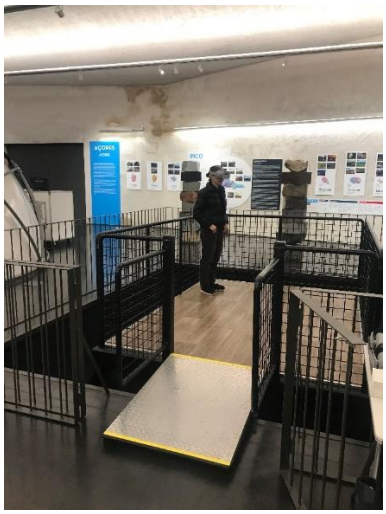
A seismic simulator combined with virtual reality brings a different experience to the visitor, who can feel the sensation of an earthquake.

Method(s) of interpretation

- Permanent exhibition space consisting of videos, photos, and photograms with information in Portuguese and English.
- Interactive exhibitions, including a Domo representing a visit to the Earth center and a platform simulating an earthquake combined with images from 1980 seism.
- The interpretative centre is completely integrated into the local landscape, respecting traditional architecture.

Image

Casa dos Vulcões (Volcanoes' House)



Source: author´s archive (*Meneses, 2023*

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4.56 Good Practice – National Visitor‘s Center of Protected Areas, Vilnius by Rasa Pranskuniene

Description

Here you can find the exposition – “Protected areas. The journey of life in a circle” reflecting the rhythm and cyclicality of nature. Here visitors can find interactive interpretation about Lithuanian and foreign protected areas (national and regional parks, reserves, sanctuaries, natural monuments, etc.). The exposition of the Visitor‘s Center is interesting not only in terms of the content, but also surprising in terms of visual solutions. When visitors enter, they feel surrounded by nature: grasslands, birds, grasshoppers all around, looking up - they will see the clouds. The visitor can imagine that he appeared in a meadow or forest – so much to feel, to touch, to listen.

Method(s) of interpretation

- National Visitor‘s Center of Protected Areas is like a gateway to Lithuanian protected areas. The exposition will help to understand what and why needs to be protected, why nature protection is becoming more and more important for the human race. Here you can find information about the most valuable areas from a natural point of view, choose nature routes and travel around our country.
- The following interpretation methods are implemented: workshops, scientific experimentation, presentation of interactive exhibitions and hands-on stations, interactive visual activities, visits to the different protected areas and a lot more.

References and further readings

State Service For Protected Areas Under The Ministry Of Environment (2021). *Exposition.* Retrieved from https://vstt.lrv.lt/en/national-visitors-centre-of-protected-areas/exposition

State Service For Protected Areas Under The Ministry Of Environment (2022). *National visitor center*. Retrieved from https://saugoma.lt/en/national-visitor-center

4.57 Good Practice – Anyksciai regional park, Anyksciai by Rasa Pranskuniene

Description

Anykščiai Regional Park was established on 24 September, 1992 to preserve, use and manage the most valuable natural and cultural territories of the North East Aukštaitija. The present relief of the Regional Park was formed by the last glacier 16 thousand years ago. When it melted, valleys were formed and now rivers Šventoji, Virinta, Elmė, Anykšta and many streams flow there. The highest hill of Storiai reaches 194 meters in height and the deepest valley of the Šventoji River is 60 meters above sea level.

Method(s) of interpretation

- The exposition at the Visitors' Centre of Anykščiai Regional Park will introduce you to the unique objects of the park. The main topic of the exposition is the nature and cultural heritage, revealed in a number of literary works.
- The exposition is rich with audio-visual material. Interactive maps provide not only the exact location of these objects, but also detailed information about them with pictures and videos.
- The following interpretation methods are implemented: workshops, scientific experimentation, poetic tours, walking, observation, night tours, interactive visual activities, visits to the different protected areas and a lot more.

References and further readings

Anykščiai (2022). *Regional Park's Visitor Centre*. Retrieved from https://www.visitanyksciai.lt/sightseeing-places/anyksciai-regional-park-visitor-s-centre/

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LLI-477 Creation of international tourist route “The Struve Geodetic Arc” (Struve; 2022). *About the park*. Retrieved from https://www.anksciuparkas.lt/en/about-the-park/

4.58 Good Practice – Birzai regional park, Birzai by Rasa Pranskuniene

Description

Biržai Regional Park boasts a unique landscape, exceptional natural phenomena, glorious history, cherished old traditions, handicrafts, culinary heritage, and local brewing traditions. It was established in 1922 with a purpose of conserving, enhancing, and promoting rational use of a unique karst landscape, natural ecosystem, and cultural heritage. Biržai Regional Park (14,405.8 hectares) offers a variety of recreational and educational opportunities.

Method(s) of interpretation

- Upon entering the Centre, you will immediately begin to feel a sense of being in a sinkhole. In a reception-room, embossed glass elements represent the structure of sinkhole slopes: a cross-section shows rock strata exposed following a landslide. A fascinating interactive exhibition featuring a core sample obtained by drilling with special drills into the sediment or rock gives to visitors a vivid impression of a scale of the depth of drill hole and visualise the bedrock strata.
- The following interpretation methods are implemented: interactive exhibitions, workshops, scientific experimentation, walking, observation, night tours, interactive visual activities, visits to the different protected areas and a lot more.

References and further readings

Biržai Tourism and Business Information Centre (2022). *Biržai Regional Park Visitor Centre*. Retrieved from https://www.visitbirzai.lt/birzai-regional-park-visitor-centre/

Biržai Tourism and Business Information Centre (2022). *Kirkilai Observation Tower*. Retrieved from https://www.visitbirzai.lt/kirkilai-tower/

4.59 Good Practice – Gruta das Torres (Towers Cave) by Raquel de Meneses

Description

One of the largest volcanic tubes in the world that can be visited in Pico Island (Azores): the Gruta das Torres (Towers Cave).

The tube is in a very natural stage, without lighting and very small human intervention. Visitors must turn on their lanterns and take special care where they place their feet after the handrail and corridor are present for the first few meters. The ground is simply the end result of lava, which can be either type "A" or type "Phoehoehoe". The former has an uneven, fragmented surface that is challenging to walk on because it is the result of the rapid release of gases. Because of its appearance, the locals refer to it as "biscuits". The texture of phoehoe lava is soft and smooth. Along the way, you can see banks, lava balls, striations, and tiny lava stalactites and stalagmites.

Method(s) of interpretation

- The visit begins in a small interpretative centre, where visitors can watch an explanatory short film about volcanology.
- Visitors are briefed about safety when material is distributed. Only guided tours are allowed.
- Because human presence must not be intrusive, there is no artificial lighting inside the entire tube and only a small number of visitors are permitted.
- The entire explanation is very interactive and uses simple language to combine scientific understanding with local anecdotes.
- The interpretative centre is completely integrated into the local landscape, respecting traditional architecture.

Image

Gruta das Torres (Towers Cave)

Source: author´s archive (*Meneses, 2023*

References and further readings

OMIC | OMIC (azores.gov.pt)
Furnas Microbial Observatory (azores.gov.pt)

4.60 Good Practice – Luhačovice spa – interpretation of mineral springs by Liběna Jarolímková

Description

Luhačovice is one of the most important spas in the Czech Republic. The mineral springs used for therapeutic purposes belong to one of the most efficient mineral springs in Europe. Mineral waters in Luhačovice have a high volume of minerals and are free of carbon dioxide. Their temperature oscillates between 10 and 14°C. They are used for drinking cures, inhalation procedures and carbon baths. The waters help in cures of the respiratory tract, organs of motion, circulatory system, diabetes and recondition after oncological treatment. The total number of mineral springs used for balneological treatment is 17, they are mostly located in the spa park, covered with pavilions or a colonnade and they are accessible free of charge. The best-known healing spring is Vincentka.

Method(s) of interpretation

- **Interpretation panels** are located directly at the springs. They inform about ingredients contained in the water, list of minerals melted in the particular spring, its use from a medical view (drinking cure, inhalation, etc.). Visitors can read some technical information about the depth of the spring, its profuseness, date of discovery, etc. The aim of this form of interpretation is to point at the given nature riches and improve awareness of the value of this nature phenomenon.
- An **audio map** is an artistic audio guide, where fifty-two, four-minute author´s dramatic radio plays full of attractive stories connected with interesting personalities and places show visitors round the spa Luhačovice. The audio map is made by well-known Czech actors. There are five routes, each of them has ten stops. “Story of Water” is the name of a spring tour.

Image

Interpretation panel of Nový Jubilejní spring

Source: author´s archive (*Jarolímková, 2019*

References and further readings

The audio map can be downloaded free of charge at

https://www.zvukovamapaluhacovic.cz

4.61 Good Practice – Building and Survival Games – Minecraft Azores by Raquel de Meneses

Description

Minecraft, released in 2011 by Mojang Studios (now owned by Microsoft), is a popular building and survival game. Not only is it an excellent form of entertainment, with millions of players around the world, but it can also be successfully employed as a pedagogical tool for all kinds of subjects, including nature tourism interpretation.

With its capability to create realistic virtual worlds, game developers and tourism professionals can recreate many different scenarios, like natural habitats and protected areas, monuments, or even entire cities, allowing tourists to explore and learn about the cultures, biodiversity, and ecosystems of these places in a fun and interactive way.

Aiming to apply this approach and explore the endless possibilities of Minecraft, in association with the regional Government of Azores, Visionarium created the World of Computational Thinking Azores. This is a Minecraft activity where players can develop their computational thinking in an island featuring several of Azores' natural landmarks, giving special emphasis to many of Azores' cultural staples, promoting a sense of immersion in the local culture and incite curiosity to one day visit the Archipelago.

Methods of interpretation

- Players can develop their computational thinking skills as well as soft skills like cooperation and communication, in an environment built to showcase Azores' landmarks.
- Players are exposed to digital renditions of several of Azores' natural landmarks, fomenting curiosity to visit these locations in person.
- One of the activities features 3 of Azores' most iconic dishes, showcasing the local cuisine and generating interest to visit the Archipelago to experience these recipes.

- Another activity showcases the individuality of each island, featuring their silhouettes and the different colours predominant in each island, showing how each island is worth visiting by itself.
- It serves to pique the players' curiosity about the various landmarks, their abiotic, biotic, and cultural factors, and the recurring message of sustainability and respect for the environment can prepare them for sustainable tourism.

Image

Minecraft Azores

Source: author´s archive (*Meneses, 2023*

4.62 Good Practice – Building and Survival Games – Minecraft Madeira by Raquel de Meneses

Description

Minecraft, released in 2011 by Mojang Studios (now owned by Microsoft), is a popular building and survival game. Not only is it an excellent form of entertainment, with millions of players around the world, but it can also be successfully employed as a pedagogical tool for all kinds of subjects, including nature tourism interpretation.

With its capability to create realistic virtual worlds, game developers and tourism professionals can recreate many different scenarios, like natural habitats and protected areas, monuments, or even entire cities, allowing tourists to explore and learn about the cultures, biodiversity, and ecosystems of these places in a fun and interactive way.

Aiming to apply this approach and explore the endless possibilities of Minecraft, in association with the regional Government of Madeira, Visionarium created the Minecraft world *Festa da Flor da Madeira* ("Madeira's Flower's Festival"). This is a Minecraft activity where players can visit an up to scale digital rendition of Funchal's Town Square and experience some of the more common activities of the Island's most iconic festivity.

Methods of interpretation

- Players are fully immersed into Madeira's Festa da Flor and learn more about the local customs and traditions.
- Players are exposed to a digital rendition of Funchal's Town Square, promoting the local architecture and scenery.
- It serves to pique the players' curiosity about the Island's culture and landmarks, and a recurring message of sustainability and respect for the environment can prepare them for sustainable tourism.

Image

Minecraft Madeira

Source: author´s archive (*Meneses, 2023*

References and further readings

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4.63 Good Practice – Star constellations – mobile application by Liběna Jarolímková

Description

The sky forms an integral part of the environment, in which mankind live, and which people perceive. People have always tried to understand and rationalize the world around them, including the sky and what´s going on there. Star watching influenced the way how people perceived the world and how they behaved. Night sky watching and determining stars´ position has become a popular activity of visitors to nature sites. Night sky is very nice. New applications have been created to facilitate the observation. These mobile applications are easily available and very user-friendly.

Method(s) of interpretation

- With the help of automatic location, a **mobile application** shows individual stars in the sky which one can see in a given time at the given place**.** They offer basic information about celestial bodies and filter according to their type or searching. For example, application Sky Map or Sky Tracker shows stars, constellations and planets situated in the direction, which the user´s mobile phone camera shows. Thanks to these applications, stars and constellations can be identified and found in the sky.
- Most applications work with broadened reality (e.g. Sky View, Star Chart, Night Sky Lite), thanks to which users get more comprehensive information about activities in the sky complete with images of models and graphics.

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4.64 Good Practice – Azores Microbial Observatory – OMIC by Raquel de Meneses

Description

Azores Microbial Observatory – OMIC is a centre for the dissemination of knowledge about the microorganisms existing on Earth with special interest in Azorean microbial beings.

It is located in Furnas, so it has a special interest in the microbial biodiversity existing in hot springs and volcanic cavities.

It is part of the Azores Science Centres network promoted by the Regional Directorate of Science and Technology and besides being an important tourist attraction, it supports school programmes that stimulate interest in science and technology.

Method(s) of interpretation

- Permanent exhibition space consisting of videos, photos, and photograms with information in Portuguese and English.
- Laboratory space where some experiments can be performed and some live microorganisms can be observed under a microscope.
- Temporary exhibitions
- Conferences and other science promotion initiatives for the general population
- Located in the central area of “Caldeiras”, it is easily accessible to students, the general population, and tourists, being able to establish an immediate connection between the centre and the ecosystem.

Image

Azores Microbial Observatory – OMIC

Source: author´s archive (*Meneses, 2023*

References and further readings

OMIC | OMIC (azores.gov.pt)

Furnas Microbial Observatory (azores.gov.pt)

4.65 Good Practice – Azores Volcanological and Geothermal Observatory – OVGA by Raquel de Meneses

Description

The Azores Volcanological and Geothermal Observatory (OVGA) is a Science Centre that develops applied research and scientific dissemination activity in the area of Volcanology, Seismology and Geothermal. It helps visitors understand how, over time, each island was created by the collision of fire (volcanoes) and sea (Atlantic Ocean). The OVGA has a didactic goal and provides in-depth explanations about the formation of the archipelago through geologically trained tour guides. It also organizes visits to schools.

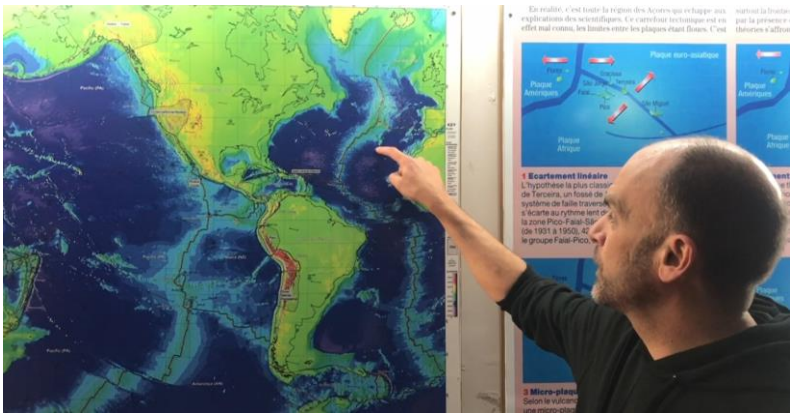
Visitors can also browse a collection of rocks from various regions, with a focus on Macaronesia.

Method(s) of interpretation

- Permanent exhibition space consisting of videos, photos, and photograms with information in Portuguese and English.
- These explanations are provided clearly and simply so that the visitor can quickly comprehend and assimilate the information.
- Visitors are welcome to ask the tour guides if they have more in-depth knowledge. The pace of the guided tours is determined by the visitor's type and level of interest.
- The interactive tours rely on conversation and interaction.
- Special considerations are given to children.

Image

Azores Volcanological and Geothermal Observatory – OVGA



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4.66 Good Practice – Labanoras Regional Park, Labanoras by Rasa Pranskuniene

Description

Labanoras Regional Park is the biggest regional park in Lithuania and its surroundings are exceptional with the variety of landscapes as well as especially rich flora and fauna. Therefore, the nature lovers are gathering at this place for a long time now and their numbers have grown after building an impressive tower to look around the surroundings, called Mindūnai Observation Tower.

Method(s) of interpretation

- A whole complex of high marshes and lakeside low marshes is protected - Kanija raistas and many larger and smaller wetlands. In the Girutiškis Nature Reserve here, the Beržalotas upland swamp shines with the mirrors of the lakes.
- The following interpretation methods are implemented: interactive, exhibition, workshops, scientific experimentation, presentation of interactive exhibitions and hands-on stations, interactive visual activities, visits to the different protected areas and a lot more.

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PARTICIPATING UNIVERSITIES AND THEIR ACADEMIC TEAMS

The Prague University of Economics and Business (CZ) was the coordinator of the "Methodology of Interpretation of European Nature Heritage in Tourism" project nr. 2020-1-CZ01-KA203-078407 co-funded by Erasmus+ Programme of the European Union.

Other universities participating in the project were:

D	Fachhochschule des Mittelstands, Schwerin
A	University of Applied Sciences – Fachhochschule Burgenland, Eisenstadt
LT	Vytautas Magnus University, Kaunas
IR	Munster Technological University, Cork
PT	University of Porto
RO	University Alexandru Ioan Cuza of Iaşi
SP	Universidad Europea de Madrid

Prague University of Economics and Business (VŠE)

Prague University of Economics and Business (VŠE), founded in 1953, is a major public university of economics in the Czech Republic. It is divided into 6 faculties offering a wide range of bachelor, master, postgraduate and MBA study programmes. The form of the study is based on the European system of credit transfer and accumulation (ECTS). Currently, there are more than 13,000 students studying at the VŠE, about 600 qualified academics and many experts from the industry. The links between the university and industry are very close, many experts from the industry teach or give lectures or presentations at the university. VŠE alumni are very successful in the labour market and have important positions both in the public and private sectors.

The university has a high reputation in our country and abroad. In the Financial Times evaluation and Eduniversal Ranking project it is regularly ranked among the best "business schools" in Central and East Europe. The VŠE is successfully engaged in international cooperation. It cooperates with more than 250 partner universities on four continents. More than 1,000 students are sent to study abroad every year and a similar number of exchange students come to our university. The VŠE is a member of many international organisations and the network of universities, e.g., the CEMS (Global Alliance in Management Education) and PIM (Partnership in International Management).

Liběna Jarolímková, Ing., Ph. D. was a coordinator of this MIENAT project. She is the deputy head of the Department of Tourism at the faculty of International Relations of the University of Economics in Prague. In her pedagogical and research activity she specializes in trends of world tourism and the position of the Czech Republic in the international tourism market, and in the methodology of professional education in the field of tourism. She gives lectures at international conferences in the Czech Republic and abroad. She has written several monographs, university textbooks and professional articles in the topic of tourism. She participates in international projects oriented at modernisation of professional education and training of experts in the tourism industry. She is a member of a prestigious international organisation of experts in tourism AIEST (International Association of Scientific Experts in Tourism).

Zuzana Míšková, PhDr. graduated from Charles University, Prague in 1984. She is a senior lecturer at the University of Economics and Business in Prague, where she works in English and Tourism departments. Her specialization is Business English, more specifically English for the tourism industry. Her main interest is methodology of teaching ESP with respect to intercultural differences in doing international business. She teaches in courses focused on the position of tourism of the Czech Republic in the international market and on sustainable tourism development manly for exchange students. As a team member, she has been involved in several international Erasmus+ projects specialized in tourism. Zuzana Míšková is the author of the textbook English for the Tourism Industry and several articles in international journals.

Fachhochschule des Mittelstands (FHM)

The Fachhochschule des Mittelstands (FHM) is a private and state-approved University of Applied Sciences. FHM was founded in 2000 by medium-sized enterprises and educational institutions. Since then, it has developed into one of the most successful private universities in Germany and established itself as a dependable partner of medium-sized enterprises. FHM's goal is to provide students with necessary theoretical and hands-on skills for their later business career. The FHM educates young, talented managerial candidates. The programmes on offer include internationally recognised Bachelor and Master programmes as well as Top-Up study programmes within the areas of Economics, Media, Communication, HR, Health, and Social Work. The concept of the FHM includes a large focus on practical, career orientation, individual tutoring, and small group sizes. Founding partners of FHM are organizations which on an international scale have been for many years successfully supporting and promoting small and medium-sized enterprises. The central campus of the Fachhochschule des Mittelstands (FHM) is located in the centre of Bielefeld. In addition to the central campus there are nine further locations in Bamberg, Berlin, Düren, Hannover, Frechen, Cologne, Rostock, Schwerin and Waldshut as well as an Online-University. The Fachhochschule des Mittelstands (FHM) focuses on applied research and practical economic research as a partner of the SMEs. Based on this general principle the FHM engages in scientific studies and research projects aimed at those fields which have a particular relevance for SMEs or are of particular, direct use for SMEs companies. As a result, a substantial proportion of FHM research projects are financed through third party investment and endowed professorships. The transfer of knowledge from the campus to industry is assured through publications from the FHM publishing house or external educational publishing houses, through open workshops, congresses, and further education seminars. The university's own institutes add to the large amount of significant, applied research produced by the Fachhochschule des Mittelstands (FHM) for industry. The Science Council of the Republic of Germany recognised the Fachhochschule des Mittelstands (FHM), as part of its assessment process for institutional accreditation in July 2007, for its impressive performance in the field of applied research.

Valerie Isabel Elss M.Sc. was a research assistant and project manager in various tourism-related and psychological projects at the Fachhochschule des Mittelstands (FHM). As a PhD student she is researching in the context of stereotypes and their effects on decision-making processes (e.g. in the context of family law psychological expert opinions). Currently, in addition to her side job at the FHM, she works as a day-care centre and school development planner for the state capital Schwerin (e.g. forecasts regarding new development areas, creation of spatial concepts).

Prof. Dr. habil. Silke Pfeiffer studied primary school education, German language and literature studies as well as philosophy. She earned her doctorate in the field of philosophy didactics at the University of Rostock and completed her habilitation on comparative educational science issues at the University of Oldenburg. She has taught for many years as a teacher in different types of schools and has been active in adult education at various colleges and universities for about 20 years. For 11 years she has been the scientific director of the Fachhochschule des Mittelstands (in Rostock). She has published numerous books and articles on pedagogical, philosophical and educational science topics.

Emy Kurz B.Sc. has been studying psychology at the Fachhochschule des Mittelstandes (FHM) Bielefeld since October 2019. She graduated with a Bachelor's degree in September 2022 and is now continuing her studies in the Master's programme. As part of her studies, she underwent a twelve-week internship with lecturer Valerie Elss M.Sc. in 2021. During the internship, Emy worked on the MIENAT project, among other things.

University of Applied Sciences Burgenland

The University of Applied Sciences Burgenland has been offering degree programmes that combine theoretically guided research and practice-oriented teaching for 30 years. Founded in 1993, it is a highly reputable institution that prides itself in having an employment rate of 99% and more than 5,000 graduates in senior positions.

The University's R&D activities take place at its two campuses in Pinkafeld and Eisenstadt. At both sites research staff closely collaborate with Forschung Burgenland, a 100% research subsidiary of the University of Applied Sciences Burgenland. Currently, the University is involved in more than 100 research and consulting projects, generating an overall volume of 5 million euros. Research activities range from large international projects involving up to 100 partners to smaller, on-demand research projects.

In addition to its wide range of research projects, the University of Applied Sciences Burgenland also strives to increase public awareness for the outcomes of research, such as employment in the region, the economic impact of research and the increase of a region's value by interweaving research with higher education and the local economy in order to boost its innovation power.

Research in the Department of Business Studies falls into three main areas: (1) Central and Eastern European business relations, (2) user and consumer research (3) sustainability in business.

Verena Liszt-Rohlf is Senior Researcher in the Department of Business Studies at the University of Applied Sciences Burgenland, where she is mainly in charge of multi-channel biometric research, eye tracking and project work, both on a European and a national level. She started her academic career at the University of Graz (Karl-Franzens-Universität Graz), from which she received an MA in Business Administration and Business Education before completing a PhD in Business Education.

Verena gained first project experience at Graz, where she was involved in the organisation and hosting of a conference and in the publication of a monograph. In the following nine years, she held various research positions at universities in Germany, allowing her to gain experience in setting up new institutes and online teaching at the private and predominantly online teaching-based University of Applied Sciences in Lahr/Stuttgart. There she had already taken over and completed EU-funded projects. She led EU-funded follow-up projects with this consortium at the University of Paderborn. At the University of Kassel she worked on research and publication projects, supervised the publication of a journal and expanded her expertise in entrepreneurship education research in the context of mainly national projects.

Marcus Wieschhoff is Professor of Marketing in the Department of Business Studies at the University of Applied Sciences Burgenland. He is also Programme Director for the MA in International Wine Marketing. Marcus completed a degree in Political Science, English Literature and International Law at the University of Bonn, Germany, and the University of California, Berkeley before receiving an MA in Southeast Asian Studies from the University of Hull, UK. After a career as an international civil servant with the United Nations, he obtained a Bachelor's degree in International Wine Management from the University of Applied Sciences Burgenland. He started a career in consulting and retail before returning to academia as Programme Director.

His research interests include marketing, consumer behaviour, pricing strategies and management techniques. He was a visiting lecturer at the University of Natural Resources and Life Sciences, Vienna, and also taught at the University of Economics, Prague.

Manuela Kovalev is Professor of Intercultural Communication and Foreign Languages at the University of Applied Sciences Burgenland, conducting research and teaching a range of courses in the Department of Business Studies. Prior to joining the University of Applied Sciences Burgenland, she was a lecturer at the University of Graz (Slavonic Studies) and a teaching fellow at the Centre of Translation Studies in Vienna. She also held a lecturer position at the University of Manchester, UK, teaching a wide range of courses at the School of Arts, Languages and Cultures. Manuela has a PhD in Russian Studies from the University of Manchester and a Master's degree in Specialised Translation from the University of Surrey. She also completed a Master's degree in combined Russian Studies and English Literature at the University of Vienna. She has extensive experience as an editor and project manager and was a business journalist for the English-language newspaper The St. Petersburg Times (Russia) before starting her career in academia.

Her research interests include (linguistic) cultural diversity and inclusion, as well as international business communication. She has published a number of peer-reviewed journal articles and has presented at national and international conferences and workshops.

Michael Gruber works in the marketing department at the University of Applied Sciences Burgenland and is responsible for the technical implementation and design of video, image and sound material. After studying communication and history at the University of Vienna, he completed technical and creative training at the School of Audio Engineering in Vienna and began his career as an editor at Austrian television stations. His activities included the design of news reports and features, color grading of television productions as well as directing. Together with his colleague Alexander Schöller, he supervises the media centre at the University of Applied Sciences Burgenland and holds a course in media design.

Vytautas Magnus University (VMU)

What distinguishes Vytautas Magnus University (VMU) is our visionary approach towards organising studies, scientific research and academic community life. Scholars from Lithuania and abroad who participated in the reestablishment of VMU in 1989 have also defined our principles, which we have been following ever since: a commitment to foster a liberal and democratic learning environment, emphasising the importance of aesthetics, honesty, tolerance and independent thought. We promote these ideals while nurturing creativity, academic progress and cultural identity within our community. VMU is a comprehensive university devoted to excellence in teaching, learning, research, arts and innovation, and fostering critical thinking, imaginative response as well as the desire and capacity for lifelong learning of our students who will have an impact on the world, locally and globally.

VMU has a reputation as a university with a globally oriented, free-spirited, liberal mindset. The time spent at VMU is a formative step in the lives of our students, facilitating not only career opportunities but also personal growth, strength of character and a sense of self-fulfilment. Studying at VMU means obtaining an all-round education conveying core competencies and abilities such as a broader understanding of global issues and society, the capacity for problem analysis and critical thinking, a spirit of inquisitiveness enabling one to adapt to new knowledge and promoting an attitude of lifelong learning, all of which empower one to make informed judgements as an individual and act confidently as a leader.

Rasa Pranskuniene was a Lithuanian team leader for the MIENAT project. Assoc. prof. dr. at the Department of Business and Rural Development Management, Faculty of Bioeconomy Development, Vytautas Magnus University and the head of Vytautas Magnus University Agriculture Academy museum. Main research fields: Museum education, Smart tourism, Nature tourism, Sustainable tourism management, Cultural education and management, Heritage, Interactivity, Grounded theory, Qualitative research methods, Critical theory. Rasa is the member of international research associations: ICOM CECA Network of Researchers; Association of Critical Heritage Studies (ACHS); LERA, Lithuanian Educational Research Association, LERA is a member of the European Educational Research Association (EERA), the Global Sustainable Tourism Council (GSTC).

Anastasija Novikova is Assoc. prof. dr. at the Department of Applied Economics, Finance and Accounting, Faculty of Bioeconomy Development, Vytautas Magnus University. Main research fields: Economic valuation of agroecosystem services, with the focus on assessment on non-market values. Completed the Post doc internship supported by 2014–2020 Operational Programme for the European Union Funds Investments in Lithuania: Promotion of Post-Doctoral Fellowships. The topic: Integrated evaluation of the impact of farming systems on agricultural outputs. Implementer of the COST action "Safety Culture and risk Management in Agriculture", 2016–2021. At present, the implementer of Horizon Europe project Strengthening Farm Health and Safety Knowledge and Innovation Systems.

Munster Technological University (MTU)

Munster Technological University is a multi-campus technological university, contributing to the region through the provision of academic programmes that support student development and opportunities, education and research. MTU has an extensive and impressive regional footprint with six campuses across the South-West region in Cork and Kerry, and a student body of 18,000.

The MTU strategy places a major emphasis on delivering outstanding learner education and experience to produce work-ready graduates; increasing investment in MTU's staff and the communities within which MTU is embedded; achieving significant growth and impact across MTU's research, innovation and entrepreneurship ecosystem; leading regional development; and adopting a global outlook across all of MTU's activities.

To achieve these strategic outcomes, MTU has identified key strategic enablers which will ensure the ongoing success of the University. These are the proactive pursuit of equality, diversity and inclusion principles across all of MTU's activities; continuous focus on sustainability and alignment with UN sustainable development goals; collective commitment to a multi-campus technological university; investment in enhanced digital infrastructure and capabilities; and development of state-of-the art physical infrastructure and capabilities across MTU's campuses.

Dr. Ana Cruz García – BA (University of Granada, Spain), BBus (MTU), MA (UCC), PhD. I completed a BA in Modern Languages (English, French and Italian) at the University of Granada, Spain in 1999. In 2001 I graduated from UCC with an MA and in 2007 with a PhD in the field of Gender Studies in Latin American literature. In UCC I was a member of the Dept. of Spanish, Portuguese and Latin American Studies until 2008 and I published on the topic of Women Writing (mainly my book that can be translated as (De)generating identities: The Figure of the Madwomen in Women Writing in Mexico). I have also published on the topics of Latin American cinema. Since 2007 I am a lecturer in Spanish language and cultures in Munster Technological University. Here I also undertook a degree in Business Studies and Management and since then I supervise in the MA in International Business. I'm also an active researcher for the Hincks Centre for Entrepreneurship Excellence with Erasmus+ project related to entrepreneurship and particularly women and migrant entrepreneurship. I have published in this area in peer-reviewed international journals. I am also involved in other Erasmus+ projects related to Tourism, Sustainability and Interpretation. My current research interests include language and cultures, gender studies, artistic visual representations (mainly cinema) and business (particularly entrepreneurship and tourism)

Dr. Aisling Ward – BBUS (University of Limerick, Ireland), MA in International Tourism (University of Limerick, Ireland), PhD (University of Limerick, Ireland). MTU Cork – Senior Lecturer in the department of tourism and hospitality. Expertise is in the area of the Consumer Behaviour and in particular within the field of tourism. Research interests are in the development of sustainable tourism experiences reflecting changing tourist behaviours, regenerative tourism in rural and coastal regions as well as tourism accessibility and inclusivity. Lead researcher on the SMP (COSME) funded project CE4RT (Circular Economy for Regenerative Tourism) in which MTU are the lead partner which focusses on providing direct support to rural tourism SMEs on the implementation of sustainable and regenerative tourism practices. Key role in research into the development, implementation and measurement of regenerative tourism governance, participating on international panels and workshops. Researcher on MTU team on Erasmus+ KA2 project titled Methodology of Interpretation of European Nature Heritage in Tourism (MIENAT). Key member of MTU Tourism Research unit in the development of funding proposals under Interreg NWE and AA. Track record includes a PhD (UL, 2006) on devising a segmentation model based on the tourist behaviour of the silver market with research published in international peer reviewed journal. Expertise in research supervising at Masters and PhD level.

Shirley Millar – BA (HONS), University of Gloucester, UK; MBUS (MTU) is a lecturer in the department of Tourism and Hospitality at Munster Technological University, Cork. Her subject areas include tourism and hospitality entrepreneurship, social entrepreneurship and practical hospitality skills. She is also currently supervising undergraduate dissertation students in tourism and hospitality with recent topics include the sharing economy, smart tourism and over tourism. Shirley holds an MBus by research on corporate social responsibility in Irish Hotels. Her current research areas of interest are social entrepreneurship, regenerative tourism and the circular economy and is part of the Circular Economy for Regenerative Tourism research team at MTU.

Ursula O' Donnell – MA in International Tourism (University of Limerick, Ireland) is a lecturer in the Department of Tourism and Hospitality, in Munster Technological University, Cork, Ireland. She lectures in the following areas: Economics, Tourism Geography, Marketing, Airline studies, Intercultural Tourism Studies, Visitor Attraction Management and Aviation Management. Her MA Thesis was based on "An economic evaluation of the cruise tourism industry to Ireland". She is the Erasmus coordinator for the Tourism and Hospitality Department in MTU.

Dr Noel Murray is Head of Department of Tourism & Hospitality at Munster Technological University (MTU). He is the Irish representative on the European Association of Tourism & Hotel Schools (AEHT) and sits on the National Consortium Steering Group (CSG) for Culinary Apprenticeships at Higher Education in Ireland. He is Membership Officer of the Irish Academy of Management and co-leads a research team focusing on the Circular Economy for Regenerative Tourism at MTU. His research interests include entrepreneurship, marketing, and strategic management, and he has presented his research at over 15 conferences both nationally, and internationally. His research has been published in high impact journals including Tourism Management, the Journal of Marketing Management, and Industrial Marketing Management. He has supervised a research masters and a PhD to completion in the areas of family business professionalisation, and social media brand participation, and is currently co-supervising PhD studies in the areas of the impact of smart destination image on tourist motivation and satisfaction; factors that motivate tourists while in-destination, and industry 4.0 implementation management.

University of Porto

The University of Porto is a public higher education institution founded in 1911 located in Porto, Portugal. It offers undergraduate, graduate, and research programs in a wide range of fields, including sciences, engineering, medicine, arts, social sciences, and humanities. With over 36,000 students (18% international students) and 3,400 teaching staff and researchers, it is recognised nationally and internationally for its academic and scientific excellence. The University of Porto is one of the largest Science producers in Portugal, authoring 24% of the scientific citable articles published. Porto University has 14 faculties and a business school, as well as research centres and business incubators that support entrepreneurship and innovation. The University of Porto also has partnerships with various international institutions, providing opportunities for academic exchange and joint research projects.

Pedro Manuel is an associate Professor with habilitation at University of Porto, School of Economics. Ph.D. at UMIST, United Kingdom (2003); M.A., University of Porto. My research focus is on consumer psychology applied to tourism, retailing and digital. I am author, co-author and editor of several books and chapters as well as more than 70 articles published in journals and conferences devoted to marketing, consumer psychology, tourism and communication. I teach consumer psychology, marketing, sales management, tourism marketing – in undergraduate, post-graduate and Ph.D. programs. I created the Master of Sales Management at School of Economics and four Postgraduation programs in business management at Porto Business School. I am board member of Digital Media Ph.D. program co-managed with Texas-Austin University. Supervisions: Master thesis – 169 students completed; Ph.D. – 13 finalized + 7 in progress; PostDoc – 5 finalized + 1 in progress Senior researcher at LIAAD/INESC-Tec (data analysis and artificial intelligence Lab). I've been responsible for more than 60 market research projects (tourism/hospitality, healthcare, real estate, retailing, ecommerce/digital business) to several local and multinational companies and public institutions both in EU, Africa, Asia and Brazil. Among those projects, at least 21 dealt with measuring economic and management (performance, profitability…) metrics using Quantitative analysis (multivariate and econometric modeling).

Raquel Meneses holds a PhD in Business Sciences and a Master's degree in Economy from the University of Porto. She has several scientific articles and book chapters published on strategy, her area of expertise. She uses both qualitative and quantitative methodologies, and recently specializes in fsQCA. She is director of the Master in Marketing on School of Economics and Management of the University of Porto. She teaches Strategy and Marketing and is the author of several pedagogical material.

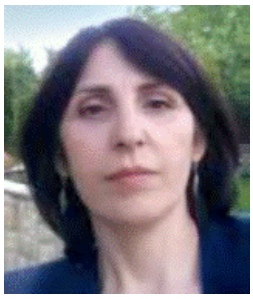
ALEXANDRU IOAN CUZA
UNIVERSITY of IAŞI

University Alexandru Ioan Cuza of Iaşi (UAIC)

Alexandru Ioan Cuza University of Iasi (UAIC), the first modern university founded in Romania (in 1860), is constantly ranked 1–3 among Romanian universities in terms of research, education and institutional transparency. With over 24,000 students and 2,500 full-time staff in its 15 faculties (17,600 BA, 5,600 MA and 900 PhD students), our university's academic offer includes 80 degrees at bachelor level (11 in foreign languages), 120 master level programmes (21 in foreign languages) and 27 fields of study at the doctoral level (all offered in English as well).

Research at Alexandru Ioan Cuza University of Iasi is top level, with a large participation in national and international research projects FP7, Horizon2020, COST, biand multi-lateral joint research projects, etc.). Scientific research activities and projects are carried out both at by the Research Groups and Centres at Faculty or University level and by the Interdisciplinary Research Departments. Our teachers are involved in over 187 national and international research projects. Striving for excellence, the university takes unique initiatives to stimulate research quality, to encourage dynamic and creative education and to involve its best students in academic life.

The current international cooperation of Alexandru Ioan Cuza University of Iasi includes over 652 partnerships with universities in 28 EU and 27 non-EU countries, affiliations to some of the most important university networks and associations (the Coimbra Group, the Utrecht Network, EUA, IAU and AUF) and cooperation within more than 100 inter-institutional agreements on all continents.



Maria Tătărușanu, PhD. († 2022) was an Associate Professor at the Faculty of Economics and Business Administration, "Alexandru Ioan Cuza" University of Iași, Romania. She taught subjects like International Tourism, Management, Interpretation of the European Cultural Heritage, Tourism and Travel Industry. Her research was focused on Tourism and Management.

Valentin Niță, PhD. is a Professor at the Faculty of Economics and Business Administration, "Alexandru Ioan Cuza" University of Iași, Romania. His field of expertise includes and is not limited to Tourism, Management of Tourism Events, Hotel Management and Commerce – Merchandising.

Corneliu Iațu, PhD. is a Professor at the Faculty of Geography and Geology, "Alexandru Ioan Cuza" University of Iași, Romania. His research and teaching experience cover areas such as: Geography and Management of Tourist Destinations, Territorial Planning and Organization, Territorial Planning, Romania's Anthropogenic Tourism Potential.

Elena Ciortescu, PhD. is an Associate Professor at the Faculty of Economics and Business Administration, "Alexandru Ioan Cuza" University of Iasi, Romania. She teaches Business and Legal English as well as Intercultural Communication at both Undergraduate and Master levels. As an active BESIG and IATEFL member, she is particularly interested in Business Communication, Business English Teaching, Intercultural Communication and other related fields.

Gina-Ionela Butnaru, PhD. is a Professor habil. in Business Administration at the Faculty of Economics and Business Administration, "Alexandru Ioan Cuza" University of Iasi. Her teaching experience is in areas such as Business Administration in Tourism, Hospitality Industry, Creating and Selling Tourist Products and Services, Management of Tourism Activities, Hotel Management.

Mirela Ștefănică is Assoc. Prof., PhD at the Faculty of Economics and Business Administration, "Al. I. Cuza" University of Iași, Romania.

She teaches courses and seminars in the field of tourism since 2012: Business Administration in Tourism, Hotel Management, Economic Tourism Projects, International Tourism, Tourism Activities Management, etc.

She has published numerous articles and studies on tourism issues in ISI, BDI indexed journals or in volumes of national and international conferences. The PhD thesis, entitled Strategies for the protection of the natural environment in the tourism industry, is an example of a research paper in the field of tourism. The main areas of interest are: Tourism, Environment, Sustainable Development, Hotel Management and Business Administration.

Universidad Europea de Madrid (UEM)

The Universidad Europea de Madrid (UEM) currently has over 14,000 students spread over its two campuses in Madrid, and offers a wide range of undergraduate, postgraduate, vocational and professional training. It has a strong international focus, with student mobility and exchanges between universities, and a campus with students from more than 80 countries. UEM has also received the European Seal of Excellence 500+ of the European Foundation for Quality Management (EFQM).

Academically it is structured into four faculties (Social Sciences and Communication; Biomedical and Health Sciences; Architecture, Engineering and Design; Physical Activity and Sports Sciences), and separate business schools. There is a specialized Vice-rector's office to deal with academic quality, coordinate research programs and oversee the different doctoral programs associated with each faculty. Excellence in research is part of UEM's commitment to society, focused on generating transferable knowledge and contributing to social progress.

Luis Lacalle is a PhD in Economics, is currently a professor of undergraduate students in Marketing, Finance and Tourism Economics, as well as several modules of the Master's Degrees. He has experience in teaching through online, face-to-face and hybrid methodology. He has collaborated in the development of content for several online subjects for Marketing and Tourism degrees. He has collaborated as a consultant for the World Bank, in Equatorial Guinea, and has taught different areas of knowledge in countries such as Guatemala, Cyprus, Belgium or the United States. In addition to his teaching work, he is an independent consultant in the field of training and previously, He has worked in various companies in the financial industry such as Banco Santander or Barclays Bank, performing both commercial and stock market operations. Between 2005 and 2008 he founded the online travel agency Portal Agencias De Viajes SL, a wholesale and retail company, in which he served as founder, majority shareholder and Financial Director.

Mr. Máximo Cortés Navajas is a Doctor in Economics and Business from the Universidad Europea of Madrid (UEM). He has a degree in Business Studies from the Universidad Autónoma of Madrid (UAM) and a Master's Degree in Advanced Studies in the area of Accounting and Business Organization (UAM). University Professor Fundación CEU from 1996 to 2007 in the Department of Business Sciences. Currently, since September 2007, he is a professor in the Department of Economics and Business, Faculty of Social Sciences and Communication at the Universidad Europea of Madrid UEM, teaching subjects in the area of business and being a tutor and coordinator of End of Degree Works in the Business Administration degree. Director of the Master in Trade and International Economic Relations of the Universidad Europea UEM (2009–2016). Author of the Business and Entrepreneurship blog of the Universidad Europea UEM. He has received awards for the best teaching work (CEU and UEM). He has several academic publications and has participated in various business initiatives and research projects.

Issa Torres is a sustainable tourism expert and Lecturer in the Degree of Tourism and Leisure Management at the European University of Valencia in Spain. She has more than 15 years of experience in the public, private and academic sector, having worked in consultancy, research, project management and training & capacity building in the field of sustainable tourism, protected areas, cultural heritage, eco-tourism and hospitality skills development. She has participated in international projects in more than 20 countries funded by multiple organisations, including World Bank, Inter-American Development Bank, UNDP, UNESCO, European Travel Commission (ETC) and UNWTO, amongst others. She holds a Master's degree in Cultural Tourism from Leeds Metropolitan University in the UK, a Master's Degree in Project Management from the University for International Cooperation in Costa Rica, as well as a Bachelor in Tourism and a Diploma in Tourism in Natural and Rural Areas from the Polytechnic University of Valencia in Spain. Issa is a Member of IUCN WCPA Tourism and Protected Areas Specialist Group, an Associate Member of ICOMOS International Cultural Tourism Committee, and Tourism Expert of the European Commission. She has contributed to publications for UNWTO, the World Bank, academic journals and books and presented at numerous conferences.

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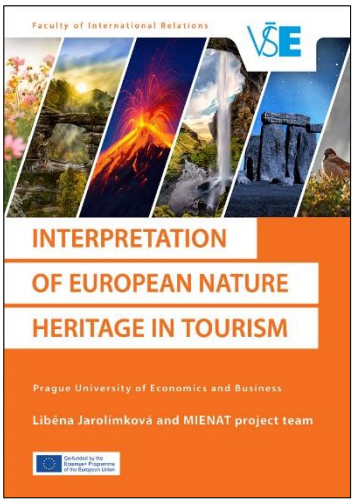

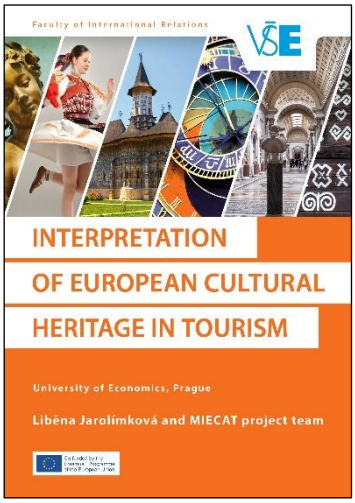

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