

SELF-DETERMINED NATURE EXPERIENCE

Towards barrier-free design of
educational nature trails



Cover image: In recent years, many treetop paths have been built in Germany designed to be barrier-free from the very beginning. Here: in the Hainich National Park.

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Picture: The Black Forest National Park in Germany offers barrier-free nature experiences for everyone, whether with a guided tour or exploring nature independently.

1.1. Introduction

The European project “Assuring the access to nature education and nature experience for impaired people” (acronym: Nature without Barriers) aims to make nature an experience available for everyone. For almost 80 million people in Europe, everyday life is associated with a wide variety of barriers. Access to nature is often difficult for people with disabilities. Ramps instead of steps are not enough to make an area barrier-free. Accessibility means that services are readily available to everyone without outside help. Ramps, sign language, Braille boards, and audible information contribute to this purpose.

Nature conservation centres and environmental educators, who want to get acquainted with the topic of barrier-free nature experience, have little practical material at their disposal. Therefore, disabled people are largely excluded from environmental education. In this project, we want to address this obvious lack. We need more barrier-free access so that everyone can experience nature. Our project develops guidelines for barrier-free adaptation of nature trails and other nature experience offers. It provides good examples from four European countries: Poland, Hungary, Austria, and Germany. With this project, we want to promote the inclusion of people with disabilities in the EU and inspire all Europeans for nature.

In addition to the guideline for the adaptation of guided nature tours to the needs of disabled people, the authors developed this practice-oriented brochure “Self-determined nature experience” as a further part of the project. It focuses on the redesign of nature trails and experiences for barrier-free independent (or self-determined) use by people with disabilities.

This brochure both provides an insight into the current reality of accessibility in nature conservation centres and contains theoretical principles and practical recommendations for removing barriers. Moreover, it includes a correspondent decision matrix to dismantle both physical and communicative barriers. It gives ideas and support in the design of self-determined nature experience. Our project team consists of representatives of both nature educators and people with disabilities. For this reason, we would like to motivate our readers to take a holistic view of the problem and thus promote a dialogue between both sides concerned.

This matrix serves to check the accessibility of existing offers; at the same time, it provides a checklist for possible further barrier-free adjustments.

This brochure does not claim to be complete. We want to show how barrier-free offers can look like and how simple adjustments can be implemented. For specific suggestions and legal requirements, we recommend consulting the guidelines “How to overcome physical barriers in nature experience” and “How to overcome communication barriers in nature experience” on the project website www.nature-without-barriers.eu.

How to use this brochure

Being an international team, we tried to compile a general picture of the reality of nature experience in our project countries as well as ideas of what to look for if you are designing barrier-free offers in nature.

As a first introduction to the topic, we recommend our Prezi presentation, to be found under the link: www.nature-without-barriers.eu/en/self-determined-nature-experience.

The complementing decision matrix for the self-check forms an additional part to this brochure.

As a further reference, the brochure “Nature experience and nature education for people with disabilities” is mentioned – you will find it, as all other links and materials, on the project website at: www.nature-without-barriers.eu



Picture: The open-air exhibition "Pathbreaking Nature" at the Schöneberger Südgelände Nature Park in Berlin, Germany (a former railway site), encourages the discovery of urban nature with its 42 panels, including 12 inclusive panels with tactile elements.

2. The reality of nature experience

This short chapter reflects on the reality of nature experience offers using the example of Germany. In the major part of national parks, nature reserves or educational centres the situation is still far away from being really barrier-free. The situation is unfortunately repeated throughout Europe: barrier-free access to nature is not a matter of course. The good news is that there are more and more good examples and people who want to actively work on the topic.

Accessibility and the reality of a small nature conservation centre

by Dr. Thomas Schaefer

I imagine myself as an employee in a small nature conservation centre in the middle of Germany in 2020. For me, accessibility is an issue. What opportunities do I have?

Assumed, our nature reserve was designated in 1976, over 1,000 hectares of avalanche forest, extensive meadows, reed belts and a large lake, an important resting place for bird migration. In 1985, the Nature Conservation Centre was established, which is run by a local nature conservation group. There are two permanent employees: me, a biologist as head of the centre with 80 % working time, and an administrative employee with 40 % working time, also a biologist. We both carry out all activities in the centre, i.e. personnel management, administration, communication and public relations as well as the professional nature conservation work.

Four participants of FÖJ (Federal Public Service Year after the end of school) complete the team in annual rotation and work in practical conservation and public relations. Numerous volunteers support the centre with environmental education, bird counts, a weekly excursion programme and monthly evening lectures; one person even cleans up with help of a FÖJ. The centre is financed by a fixed subsidy from the Ministry of the Environment for area management, a subsidy from the municipality for environmental counselling, through landscape management activities in the nature reserve and through donations.

Here you can really experience rough nature: There is a wilderness adventure trail, 6 km of circular walk over rough and smooth, leading to a spectacular rocky slope with a magnificent view of the lake. A geologist has compiled detailed information about the geological development of the area and donated a display board to establish the nature conservation centre. An asphalt path leads through dense reeds for 1.5 km to an observation tower. A meanwhile faded display board explains which bird, amphibian, dragonfly and plant species you can observe here. Along a public cycling path that runs next to the nature reserve, a few years ago, the centre established a new educational trail with eight stations addressing also children. A small exhibition in the nature conservation centre takes visitors through the natural history of the area. The nature conservation centre offers excursions on its website and on Facebook. Two groups of children explore the area once a week guided by volunteers with the support of the FÖJ.

Accessibility is an important issue for both staff members and the association's board, not only because there are people with reduced mobility among their relatives. The issue of certification and redesign was already addressed in 2008 when the United Nations Convention on the Rights of people with disabilities was ratified by the Federal Government of Germany, because it was considered appropriate and significant.

As no funds were available for the implementation of certification measures anyway, this was not followed up. A few years ago, the administrator took up the issue again, when a comprehensive handbook was published, but did not quite know where to start.

A pragmatic and concrete handbook with advice on which of the existing offers can be adjusted by simple means and used for which needs, as well as how to communicate necessary information well on the website and in social media would be a great help. A decision matrix and good visualisation with practical examples can support this. It would then also be worth asking a regional credit institute that promotes such activities.



Picture: All guests are happy to have sufficient resting opportunities along the path. These can be made accessible to all users, such as this wheelchair accessible table in the Black Forest National Park, Germany.

Accessibility and inclusion – a snapshot from Germany in 2020

The UN Convention on the Rights of Persons with Disabilities came into force in Germany eleven years ago. It stipulates the participation of people with disabilities in all areas of society. Since then, the concerns of people with disabilities have been a more frequent topic of discussion. Nevertheless, the question must be asked how seriously their requests and commitment are actually taken. It makes a big difference whether people with disabilities are only allowed to give their opinion on a project planned for them or whether they are involved in the whole project development and implementation from the very beginning.

It is very helpful to have the processes of transformation accompanied by people with disabilities. With this support, changes can be made in a meaningful way right from the first step.

Thinking about the needs of people with disabilities right from the start of planning general changes may require a little more time and organisational effort. The costs are only a little higher than retrofitting the necessary equipment at a later stage. Accessibility affects almost all areas of life. Here, the public transport and the accessibility of websites are emphasised, as both are closely connected to the usability of self-determined nature experiences. One could say that these two factors form an entrance gate. An offer can only be used if it can be reached, not only by car, but also by public transport, if possible without having to change from the nearest train station. In reality, planning the journey usually proves to be very time-consuming. The timing of the buses allows little flexibility. A two-hour cycle with low-floor vehicles is a positive exception. The stops should be announced, and this does not necessarily happen automatically – especially in intercity buses. The information on arrival and departure by public transport belongs on the website. To provide the timetable for download is a service that is by far not yet a matter of course everywhere.

Websites are often the first source of information for people with disabilities when it comes to planning their leisure time or excursions. Therefore, they have to be programmed in a barrier-free way. There are binding standards and guidelines in Europe that are to be applied to websites and mobile applications of public authorities. The standards ensure that websites and mobile applications are usable and accessible for people with disabilities through their design, structure and content. Private companies and organisations are not yet involved in these guidelines. Technically, it is right easy to make a website largely barrier-free. In our handbook on barrier-free communication, we will go into this topic in more detail. The barrier-free or inclusive offers should be listed prominently on the website, as users otherwise will not find them. They belong under an own tab on the home page or in the category “Your visit” or “Visitor information”. This menu item should be placed – clearly visible – directly on the start page.

The offers for people with disabilities are mostly not described in a way that this audience feels addressed. There is a lack of detailed descriptions of what makes the offer attractive e.g. for hard of hearing persons or people in wheelchairs. Information about what support – also in the form of technical assistance – can be offered to visitors is necessary to be given on the website.

It may seem unimaginable to bring together wild nature and standardised accessibility. Nevertheless, investments in inclusive projects and barrier-free design offer a gain in comfort for 100 percent of visitors.



Picture: Experiencing nature with all senses: this was the experience of our colleague Claudia in Hainich National Park, Germany.

3. The vision of barrier-free nature experience

An experience of nature as I dream of

by Claudia Böhme

When I hear or read the terms nature experience or national park, I always think of a hot summer day in a cool dense forest. I am blind. Going into the wild is not the most obvious idea for me. I would do it however, if the offer is something I cannot resist. Do you think creating an irresistible offer is impossible?

Then let's play through the impossible, just in our minds: You have done good advertising through your usual channels as well as through organisations of disabled people. You have described exactly your offer and how to get there by public transport. You have a clear and largely barrier-free website, where all information can be found quickly, written in sentences that are easy to understand. You can also use apps to inform your visitors in advance and offer tours for download. This is a good way to prepare for the visit and attracts people who want to come. The tours can be provided with additional description for blind people, sign language videos and Easy Language. Not all tours have to be suitable for everyone, but something exciting should be there for every visitor. The offers can be extended little by little.

The local road network in your nature conservation area or national park is well developed. It can be easily accessed with wheelchairs and prams. A blind person is able to orientate her or himself with the help of the white cane by the edges of the path. There are markings running at right angles to the path, making it possible to draw attention to interesting points along the way or to find a bench to sit on. Information about these points can be provided via an app in audio format or QR codes can be used to make it available on site. If you would like to provide additional visual information on information boards, design them with high contrast and choose a font that can be read easily by as many people as possible. It might also be a good idea to include tactile representations on the boards or to provide materials in tactile boxes, but only those that can be easily refilled or replaced.

Eating and drinking is still important. However, you may already have it on site. Maybe there is also the possibility for the visitors to have an individual picnic in nature, on specially designated places. I imagine that this would certainly be an experience for many - eating and drinking, resting, very close to nature. I personally like to take something with me at the end of my visit, preferably something to smell or taste. Think about it, maybe there are special fruits in your national park, nature reserve or area that can be made into jam. Herbs make a delicious tea or can be used for scented bags. Perhaps you know a beekeeper who makes a very special honey.

Inform yourself and become creative. Think about whether it is possible to renew and adapt things within the framework of pending measures in a way, that as many people as possible benefit from them. Your long-term goal could be to offer all visitors a valuable time in and with nature.

3.1 Paths / Environment

Barrier-free trails ideally should reflect the needs of the expected visitor groups. The first aspect that comes to mind is the path surface. Any holes or slippery parts will be an obstacle for every user. However, persons with mobility restrictions or those who will not notice these obstacles are most affected. The ideal path should remain free of any sudden changes – like curbs or steep slopes. It should not go too much up or downhill or be inclined to one side. The surface should be solid, making walking or moving the wheelchair easy. However, some changes in the surface may be used to catch the attention of the visually impaired.

The width of the path should be adjusted to the expected traffic. The minimum width would allow an easy passing of wheelchairs. Stopping bays, widening of paths or sideways should be placed at scenic points and where gathering of large groups may be expected. Path border should be clearly noticeable, detectable with the white cane (see 3.3), and shaped or arranged in the way to prevent going over it with the wheelchair.

The exact parameters, such as width, slope inclinations etc. can be found in the guideline on eliminating physical barriers, developed in the frame of this project – please, visit the project website www.nature-without-barriers.eu for further information.

The surroundings of the path are important as well. There should be nothing hindering the walk. No overhanging branches in the reach of people should be found. This is important for the blind people, but also for those able to see, when losing their attention, e.g. due to excitement.

The neighbourhood of the path will differ, depending on the local features of the environment and the goal of the path. Some paths will focus on the scenic beauty and the good view should be assured, while other trails provide experience of being inside a dense reed bed or dark forest. However, the safety of the users should be considered. For instance, when a path over the swamp provides some wet feet experience, the place should be marked and secured.

A good path does not cross roads for vehicles or bikes, although this cannot always be avoided. In such a case, good design of the crossing is vital. Markings, speed limits, speed bumps or even traffic lights may be applied.

3.2 Information provided

Both content and format of information can create additional barriers, when applied inappropriately. Text that is too complicated or scientific, poor contrast and visual quality, wrong placement of information plates are typical obstacles you avoid easily with careful planning.

A well-designed trail provides information about the length, the type as well as level of difficulty of any possible barriers to be expected. For the wheelchair users, slopes are among the most important. People who can walk but with effort, would be happy to know how often there is a resting place, and all of us - whether there are toilets along the path.

People with learning difficulties or just poor knowledge of the language or the topic, are better served with content communicated in simple terms, in short and well-illustrated. Scientific knowledge should not be a requirement to understand the content.

It is also important that the information is adequate to what is in the field. Users should be able to verify the information with what they see. If some phenomena occur seasonally, it should be clearly stated. Good illustrations are very important - for anyone who visits the place. The form in which the information is presented is of similar importance. Visual information should be accessible and readable. Colours, contrasts, background, size and font of the letters in relation to sunlight should allow reading without problems. There should be enough space for groups of visitors. Any interactive elements should be accessible for everybody, placed low enough to be reached by wheelchair users or kids. For the audio information, messages should be simple, provided with short sentences, read with clear voice, audible in different conditions (exclusively to the user, not all people and wildlife around).

3.3. Guidance systems

A barrier-free guidance system should be very obvious and easy to follow. It serves two main purposes: to find the way and information along the route, and to provide safety.

Sometimes the path itself is the best guidance, like in case of a paved road with no alternative routes or turn-offs and well bordered with curbs. Also on such a path, there are places of interest. These should be marked to be noticed and understood by everyone. Dangerous places near the path should be marked with clear signs as well. Orientation in space may be ensured by a special tactile guidance system for blind people. It may include curbs, different surfaces, handrails and variations of such measures. Interesting examples that are worth developing into an international standard can be found in Spain. The norms for marking paths in city parks have been adopted and gradually implemented by some municipalities. Interesting extension to the tactile system is the use of scents (provided by shrubs and flowers planted along the path at certain times of the year).

Audio signals may also be used. A blind person from Poland described to us a system, where places of interest have been equipped with devices emitting neutral but distinguishable sounds, such as at the street crossings.

Some places with a high number of visitors provide supporting audio devices that would navigate the blind person using exact GPS localisation, and provide substantive information, interesting for any user. Similar systems are under development as smartphone apps. Blind people have already tested an app for the historic places of the Polish city of Warsaw.

There are visual systems that are very commonly used in field conditions to mark tourist paths. In Poland, the tourist paths are marked with colours, which may cause some problems for colour-blind people, especially if routes are crossing and the signs do not differ much except in colour. Special signs are used for marking the nature trails, though this system is less formalised than on tourist trails and some other marking signs are in use as well.



Figure: Marking found on the nature trails in Poland. “Znaki ścieżki dydaktycznej” translates to: “educational trail marking signs”; “początek/koniec” to: “start/end”

Markings should be placed at a regular distance, to assure walkers that they are on the right way. They should be placed shortly before and after turning points. Places of interest may be marked with numbers placed on the sign itself or with the additional plates.

3.4. Weather

Weather conditions are one of the most important factors to take into consideration, when visitors plan their excursions. Although the weather itself cannot be influenced, both visitors and the maintenance workers of the nature trail have the possibility to prepare for the various weather conditions. Visitors can look in advance for the weather forecast expected on the excursion date. A nice sunny day or partly cloudy weather are the most suitable for taking an excursion, but the potential visitors should not stay at home just because the temperature is too high or showers are expected locally.

If the weather is hot, mountainous forestry areas can be good destinations for visitors, where trees offer natural shading and the temperature is more favourable too. In such weather conditions, visitors tend to take breaks more often to rest. Excessive sunlight can be an obstacle for hearing impaired people, as it makes keeping eye contact and lip reading more difficult. In addition, excessive sunlight can cause problems for visually impaired people too, as it can make the surfaces of objects sparkling and shining. Therefore, it is recommended to establish shady resting places, which give protection against strong sunshine and contribute to breaking sun-

light, thereby improving visual conditions. If it is possible, natural shading solutions should be used e.g. large plants and trees. If these solutions are not available, shading objects, such as pergolas or shelters should be established.

Showers or rainstorms will not discourage people from going outside to experience nature, but they can represent smaller or bigger obstacles for them. The surface of the ground can become sodden and slippery after a long and heavy rain, but even after short showers too. This causes mobility problems for people with motor and/or visual impairments. On the muddy ground, it is difficult to move with a wheelchair or to use walking sticks, crutches or the white cane. Rain causes problems for hearing impaired people as well, since hearing aids are not waterproof, but only drip-proof. In addition, the loud noise of rain makes it difficult for them to interpret what they hear. Therefore, it is recommended to use non-slippery and permeable pavement on the nature trail (where possible) and establish rain protection solutions at resting areas.

In case of windy weather, generally no special preparation is needed. Of course, when the wind blows strongly, it is not pleasant to stay outside for a long time. For wheelchair users, it is advisable to bring a blanket with them. In case, they are unprepared, blankets can be provided on site in order to diminish the risk of catching a cold. However, strong wind can disturb the communication of hearing impaired people, as the noise of wind makes it difficult for them to hear and understand each other. Therefore, rain protection solutions can be advantageous in windy weather as well.

In winter, snow and ice can cause problems. In general, snowy trails and paths do not cause problems for visually and hearing impaired people. However, wheelchair users find it difficult to move in snow. Therefore, snow should be removed from trails when possible. There is no doubt that slippery surfaces, such as ice covered stairs or frozen slopes, can be very dangerous for everyone.

3.5. Possible hazards

Several environmental hazards can arise outside in nature, which can endanger the success of the entire excursion. Natural hazards are naturally occurring physical phenomena. There are various types of natural hazards, such as geophysical (*earthquakes, landslides, tsunamis and volcanic activity*), hydrological (*avalanches and floods*), climatological (*extreme temperatures, drought and wildfires*), meteorological (*cyclones and storms/wave surges*) or biological (*disease epidemics and insect/animal plagues*) hazards. The occurrence of natural hazards in terms of time and space is very diverse. Each hazard is unique in some way. Natural hazards become disasters when the lives and livelihoods of people are damaged.

In case of natural disasters or emergencies disabled people are one of the most vulnerable groups. Often they have only reduced possibilities and abilities to prepare themselves for an emergency. They can be at risk during an evacuation, if assistance is not available. For people with learning disabilities it may be difficult to understand the given emergency instructions and it may be difficult to communicate with hearing impaired people. Early warning systems, which alerts the general public, often cannot reach disabled people on time.

It is recommended to make a self-assessment of the needs during a disaster (with special focus on the needs of impaired people), prepare an evacuation plan and register in advance for emergency assistance. For managing disasters, information, medication and other necessary items should be provided.

It is important to establish strong cooperation and personal networks for example with disability organisations and specialised transport networks for impaired people. They can help in emergency management.



Picture: Alternative solutions for stairs can often be well integrated into the landscape. Here: a slope in the Kleiner Spreewald Park, a recreational park near Berlin, Germany.

4. Obstacles and solutions

In spite of the fact that nature is not barrier-free and it will never be, you can still make it accessible for many visitors. When people with disabilities go to discover nature, they face many barriers and obstacles. However, through careful planning, communication and preparation it is possible to eliminate or at least mitigate most of them. When designing nature trails, it is recommended to take the following physical factors into consideration:

Location: as hearing conditions are different everywhere, nature trails should be located further away from motorways, busy highways, and train stations. These noises make it very difficult to understand spoken/audio information, especially for hearing impaired people that are using hearing aids. However, loud background sounds can also disturb visually impaired people who depend only on hearing, or people with learning disabilities, whose comprehension skill is weaker. In addition, special attention should be dedicated to visual conditions. For example, excessive light or darkness can disturb hearing impaired people in lip reading.

Route: nature trails should introduce the most characteristic and most spectacular natural attractions of the area. The route of trails is recommended to be simple and easy-to-be followed by impaired people too. As the abilities of disabled people are very different, alternative routes, with different difficulty levels, should be established. The level of difficulty, the length, the incline of slopes, and the location of stairs should be clearly indicated for visitors. There is a risk that individual visitors with disabilities might get lost on the nature trail. Therefore, easily understandable information signs have to be located along the way. In addition, it is important to inform the visitors about the phone number to be called in an emergency situation.

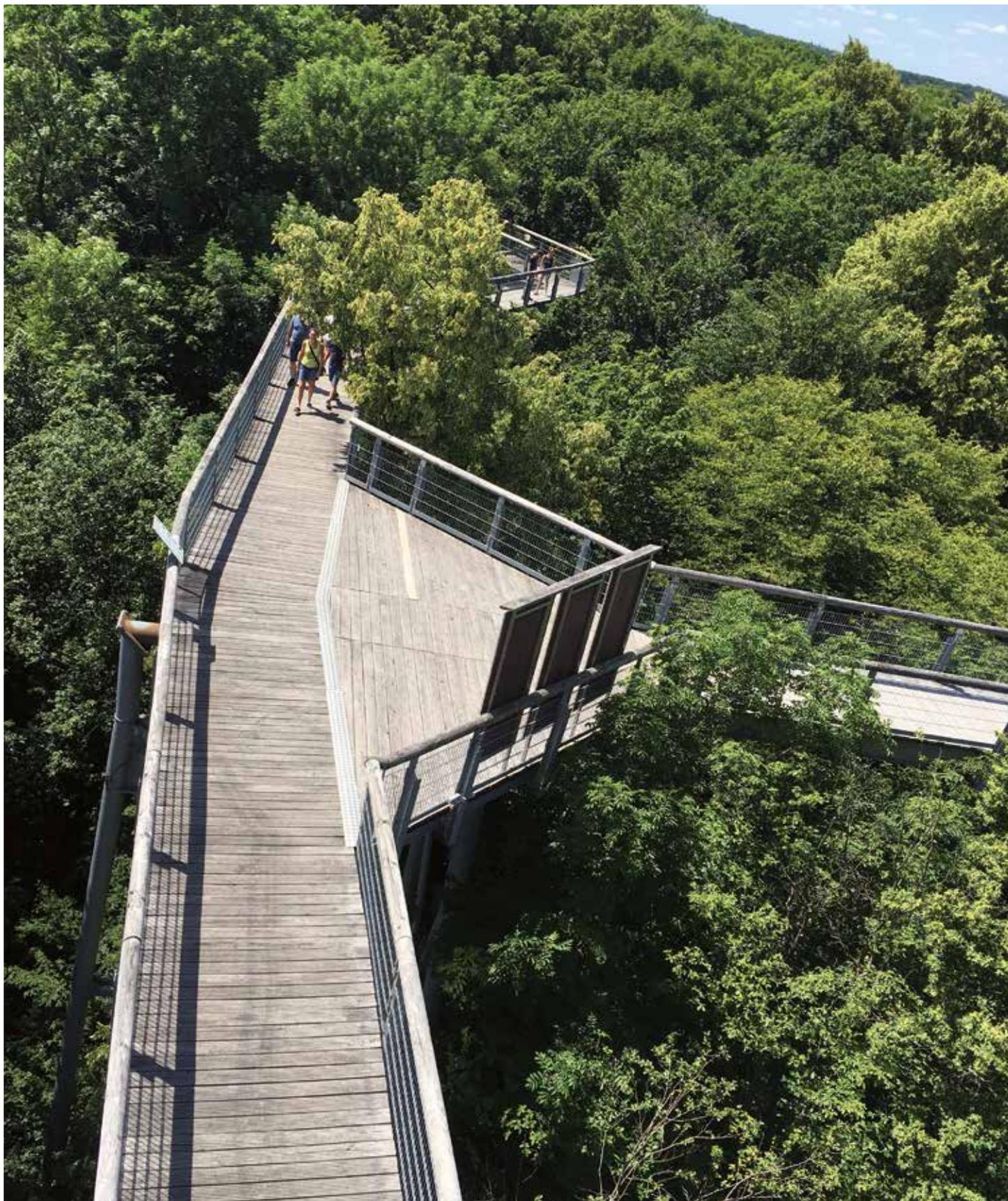
Surface of trails: visitors use nature trails in different ways. Some people go through the path on foot, while others ride bicycles, go with prams or sit in wheelchairs. The surface of nature trails should be suitable for all these kinds of utilisation. If the soil is loose, wheels and special aid equipment can sink and spin in it. Therefore, a solid and compact surface should be ensured. Uneven surfaces and stones on the ground can be sources of dangers for visually impaired people and people using mobility aids. Thus, the surface should be smooth and even. In addition, large holes on walkway gratings and gutter grates also cause obstacles, as the cane or feet might get stuck in the holes. They are dangerous, as people can trip over. Therefore, the size of holes should not be too large.

Width: the appropriate width of nature trails depends on their utilisation: whether there is one-way traffic or two-lane traffic on the path. It is recommended to plan the width large enough for at least one wheelchair user (or an impaired person using mobility aid) and for his or her assistant when they are moving side by side. Extra space (wider path) is required near cliffs and parapets. If the path is too narrow, it causes inconvenience for visitors. For example, the personal assistant does not have enough space to accompany the impaired person, or when someone is coming along, cannot pass by.

Level differences: establishing stairs is the easiest and most convenient solution in order to overcome level differences. However, wheelchair users and many people with mobility problems cannot use stairs at all. Therefore, alternative solutions should be installed for them, such as slopes and ramps. The ramps should be used safely and easily. Therefore, too steep ramps should be avoided (the max. incline should be 5 %). Resting areas should be established on long slopes and uphill trails. Handrails along the paths are helpful for going up the ramps and slopes.

Objects on the trail or nearby: objects on the ground or objects overhanging into the route can be barriers for impaired people, such as tall grass, tree roots, stones, mud or rain puddles. They can even be dangerous for them. For example, blind people often do not notice branches hanging into the route, because their attention is concentrated on the floor area, especially when they use a white cane. Therefore, nature trails should be checked regularly for possible dangers and larger obstacles should be removed. Special attention should be dedicated to the proper height of demonstration and information materials (sand tables, boards, tactile tools). If they are located too high, wheelchair users and people with short stature cannot see them. Therefore, these materials should be installed in a way to be clearly visible from sitting position as well.

Missing resting areas and toilets: For every visitor, and especially for impaired people, having enough resting opportunities as well as toilets on the way would be a prerequisite for a pleasant excursion. There are various interesting solutions on how to integrate those areas into the natural landscape. An understandable indication of such both on site and in the description of the offer is of special importance. Without knowing if there are resting areas and toilets available, many people will decide against the offer. The installation of such areas as well as their indication on the webpage, in the brochures and on trail maps should ideally happen already in the planning stage.



Picture: Treetop trails attract visitors with their barrier-free facilities and offer unforgettable experiences for all. Here: Hainich National Park, Germany.

5. The service chain

If you want to provide barrier-free self-determined nature experience, it is best to have a list of the most important areas to think of. Therefore, the service chain has been introduced as a framework in tourism. The service chain serves as a mental aid for the publicly accessible offers of a nature area or any other similar area. It describes the range of services from the first information about the journey to the nature area as well as the offers on site.

A nature experience can both cover the service chain and/or be part of an existing service chain. For example, an accessible toilet may not be located on the trail but in a nearby accessible restaurant.

If all information and services are accessible, you have a complete service chain. If a link is missing (e.g. no information about a barrier-free toilet in the announcement or no means of transport for arrival and departure available), the service chain breaks down and the offer cannot be used or just to a limited extent. It is therefore important to check whether the main links of the service chain are available before announcing a nature experience offer. Just one missing or maybe only insufficient link in the service chain can keep possible guests from visiting!

Attention! It becomes critical when offers designed only for people with very limited mobility are communicated with 100 % accessibility. Herewith, other user groups, e.g. people with visual impairments, are simply forgotten and not taken into consideration.

The service chain forms the basis for the self-check matrix and contains the following elements, which will be explained in more detail below:

- Information
- Getting there and away
- Infrastructure
- Condition of the nature paths and quality of experience
- Sustainability
- Additional services

Information

Online – To allow the visitors to prepare themselves in advance, it is important to make accessible documents describing programmes, infrastructure and special services in detail available on your website. The website should be ideally designed according to the WCAG 2.1. For further information see the guideline “Nature experience and nature education for people with disabilities”.

To be able to get all necessary information in advance is crucial; otherwise, interested people will probably not even go to the nature area.

On site – Access to information and communication includes, among other elements, electronic and emergency services. People with sensory or intellectual impairments often have trouble understanding information. Solutions include measures to provide signage in Braille, in easy-to-read and -understand forms in buildings and other facilities open to the public. Furthermore, guides and sign language interpreter services should be available in public buildings.

Staff – The employees should both be able to pass on all information about the barrier-free as well as all the other offers and to communicate accordingly with different target groups.

Getting there and away

Transportation – Regardless of weather, it is a matter of a connection to barrier-free public transport or appropriately marked parking spaces – usually people decide at this point whether they can use a concrete offer or not.

On Site – Physical access means access to public buildings, roads, transportation and other indoor and outdoor facilities, including buildings of the nature areas or National Parks. Especially individuals with mobility impairments are dependent on physical access.

Infrastructure

When planning and constructing all buildings and facilities in the nature area, it is important to consider as many different groups of people as possible. Otherwise, a large number of visitors might not be able to use the infrastructure.

When it comes to accessibility certification, there is no way around national guidelines and standards.

Buildings / Architecture – In all offerings (entrance area, reception, restaurant, seating / tables), it is necessary to ensure that they are physically accessible to people in wheelchairs or with other physical impairments and that they are sufficiently recognisable or marked.

In case of emergency, it should be possible to leave the building as quickly as possible or to get to the meeting point. The route must be clearly visible and marked with light and sound signals.

Sanitary facilities – Barrier-free toilets should be available in the information centre and on the hiking trails or in the outdoor area. A barrier-free toilet is not absolutely necessary for all groups, e.g. visually impaired people, but can make their experience more comfortable.

Condition of the nature trails and quality of the experience

Of course, not all hiking trails in the nature area have to be wheelchair accessible or generally barrier-free. For instance, this might not be possible in the alpine region. It is therefore advisable to concentrate on simpler hiking trails and to design nature trails in such a way, that people with disabilities can also have a self-determined experience. A good guidance system is helpful, and the avoidance of possible hazards (edges, branches ...) is essential. Attention should also be paid to the condition of the ground.

The condition of surfaces of the hiking trails and other outdoor areas are ever-changing, due to exposure to the weather. This may lead to a more difficult and even impossible use of the trails, e.g. driving on a frozen trail with a wheelchair. If this is the case and cannot be avoided, a clearly recognizable marking is indispensable. Attention should also be paid to a sufficient number of resting areas.

Sustainability

In order to guarantee sustainability, it is important to continuously keep the topic of “accessibility” in mind or to integrate it permanently. It is not about creating opportunities in the short term, but about maintaining them in the long term, which can also lead to an increased level of awareness. If offers and possibilities are only available for a short period of time, the guests may be disappointed.

Another topic concerning sustainability is regular training of the employees on site. Obtaining expertise from people with disabilities and exchanging information with other providers also help to ensure quality.

Additional services

Barrier-free additional services can be technical aids, such as rental wheelchairs, special wheels, induction loops or special translation aids. Providing links for aids rental or contacts of interpreters helps people with disabilities when planning a tour. The possibility to directly book an interpreter in advance could be a further option for additional services.



Picture: Tactile models form an important part of self-determined nature experience. Here: a long-eared owl made of wood as part of the outdoor exhibition "Pathbreaking Nature" at the Schöneberger Südgelände Nature Park in Berlin, Germany.

6. Matrix

The decision matrix on self-determined nature experience was developed as a further part of the project. It aims to both help to get a good overview of the current state of a nature area in terms of accessibility for independent use by concrete groups of people with disabilities and to show, where a lot could be achieved with little effort and possibly lower costs. It should encourage people to deal with the topic of accessibility and to look at what is necessary and, above all, possible in a specific case.

The matrix is structured according to the service chain, whereby the individual points are subdivided into sub-points – the so-called criteria. The third column provides information about the target status or examples of good implementation options. The next column shows for which of the individual impairments an appropriate implementation of the various criteria is advisable or even necessary.

The matrix is not a checklist with “wrong” or “right” as a result, it is only meant to support and assist in revealing existing possibilities. Just print it out and try it on your nature trail!

You can find the matrix in the second part of this brochure or download the PDF directly on our project website:

www.nature-without-barriers.eu/en/self-determined-nature-experience.html.

Matrix: Evaluation-tool for self-determined nature experience							
Service-chain	Criteria	Examples and/or desired situation	Reduced mobility	Visual impairments	Hearing impairments	Learning impairments	Possible improvements
1. Information and communication	1.1 Information on the website	All information about the options and offers of the inclusive nature experience, but also about the area and its condition and limitations, should be accessible on a barrier-free website in advance. The given information makes it possible for interested people to decide for themselves whether they want to explore the site on their own or with an accompanying person. Ideally, there are different offers for different requirements. In general, it should be possible to get information about anything mentioned in this check-list prior to arriving.	!!	!!	!!	!!	
	1.2 Available information material on site	Leaflets, brochures etc. in Braille, with pictures, easy-to-read or simple language, large print, high contrast, audioguides... Positioned in reach for wheelchair users and people of small stature.	!!	!	!	!	
	1.3 Getting there and away	Information about the arrival and departure should be available online and on site.	!!	!!	!!	!!	
	1.4 Orientation on site	Written information and signs, but also audio-information and/or tactile maps for orientation should be available on site.	!!	!!	!!	!	
	1.5 Informed staff	Informed staff can give information about special services and offers by telephone and can assist and answer questions on site. The staff should be sensitized for interaction with people with different disabilities.	!!	!!	!!	!!	

3

Legend: ! – advisable/helpful, !! – necessary

Figure: The matrix is structured along the service chain. Shown here is part 1 on information & communication.

Bibliography

„Guided nature experience for people with disabilities“, part 1 and 2
– project Nature without Barriers

Nature without Barriers project website: www.nature-without-barriers.eu

Imprint

This publication was realised within the project „Assuring the access to nature education and nature experience for impaired people“ (acronym: Nature without barriers). This project was funded with support from the European Commission. The European Commission support for the production of this publication does not constitute an endorsement of the contents, which reflects the views only of the authors, and the Commission cannot be held responsible for any use, which may be made of the information contained therein.



Projectcode: 2018-1-DE02-KA204-005222

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Layout: Annette Maucher www.maucherdesign.de

March 2021

Images:

Cover image: C. Böhme, p. 4 mahp-barrierefrei, p. 8 mahp-barrierefrei, p. 10 C. Böhme, p. 14 Etna archive, p. 19 C. Böhme, all others – GNF archive.

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Projectcode: 2018-1-DE02-KA204-005222