



Visitor behaviour and best practice visitor services in European protected areas

Does connection to nature lead to pro-environmental behaviour and what methods can we use to communicate with visitors and facilitate pro-environmental behaviour in protected areas?



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Introduction

Protected areas have a pivotal role to play, not only to ensure that nature is protected for the future, but also for people to experience nature. Recreation can be a major ecosystem service and can contribute to conservation and wildlife protection; for example, by providing a funding stream (Schagner et al, 2016). However, recreation has to be balanced with the importance of protecting biodiversity and it is well recognised that high footfall can have an impact on habitats important for wildlife. Managers of protected areas have difficult trade-offs to make to ensure biodiversity is protected but people have the opportunity to enjoy and explore these areas and build their connection with nature.

A disconnection to nature is often cited as the one of the greatest threats to the natural world. Disconnection leads to disinterest and disinterest can breed potentially destructive behaviour at the expense of the environment. Connection to nature is considered to be an important predictor of both subject wellbeing and ecological behaviours (Mayers & Franz, 2004. Lumber et al, 2017); however, recent evidence suggests a very high level of connection is required before pro-environmental or pro-nature behaviours are demonstrated (RSPB con-sci, 2017). Furthermore high connection to nature in childhood is not necessarily a predictor of connection or behaviour later in life although linear data is not yet available for this (RSPB con-sci, 2017).

In addition to promoting connection to nature there are four key techniques for facilitating pro-environmental behaviour: convenience (e.g. providing recycling bins), information (e.g. signs), monitoring (e.g. rewards and incentives), social-psychological (e.g. peer led campaigns) (Osbaldiston, & Schott, 2012). A combination of these is usually used within protected areas to promote pro-environmental behaviour both within and beyond the protected area although it is often difficult to evaluate the effectiveness of the techniques implemented.

There are several respected scales used for measuring connection to Nature: Connection to Nature Scale (Mayers and Franz, 2004), Relatedness scale (Nisbet et al, 2009) and the Connection to Nature Index (Cheng & Monroe). My questionnaire was modelled on these scales, incorporated measures of pro-environmental behaviour.

Study Rationale and Methods

My role as Community Involvement Ranger is located in one of the busiest and most accessible areas of the Peak District National Park, bringing me into contact with people from all walks of life. The focus of my role is engaging and involving the local community and working to ensure that people can enjoy the area in a way that is sensitive to the habitats and wildlife present. I work with volunteers, community groups, families, Youth Rangers (Junior Rangers) and other stakeholders to actively involve them in the care of the area through practical tasks and long-term campaigns. Additionally, we work to effectively communicate with our visitors and impart nature-friendly behaviour on site, through a range of mediums including signage, events, social media and infrastructure.

As part of this project, I was keen to visit a range of protected areas that were close to cities and received a lot of footfall from everyday recreational visitors (rather than people with specialist wildlife interests). I hoped to learn how other protected areas communicated with their visitors and impacted behavioural change, and the role in which rangers had in this process. In addition to my own place of work, I visited six protected areas across four countries: Estonia, Finland, Germany and Switzerland. All of the protected areas visited were within an hours' travel of at least one large city, most areas ran Junior Ranger programmes and all had some form of ranger or outreach staff. In most places, I was able to spend time with these staff

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exploring the protected areas, joining patrols, junior ranger sessions, school group visits and meeting volunteers. I gained a real insight into the way different protected areas are managed and the role of rangers and communities. I found it very beneficial and I was able to identify many common themes as well as innovative ideas and learn what methods have worked well in different countries and within individual protected areas. Additionally, I wanted to find out if there were any notable variations in visitor behaviour and attitudes between countries and cultures.

A visitor survey was constructed to attempt to quantify peoples' 'connection to nature' and pro-environmental behaviour. There were adult questionnaires; for ages 16+, and a shorter questionnaire, for children aged up to 12. Young people aged 12-14 could choose which questionnaire they wanted to answer, however there were ultimately no participants in this age category. The questionnaire captured key information about the visitor demographics and how far they had travelled to reach the site.

The questionnaire uses the Likert scale to measure levels of agreement with a statement. Where possible, at least one day of surveying was timed to fall on either a weekend or public holiday to ensure a mixed audience. Although this was termed a "Visitor" survey, it was aimed at anyone accessing a protected area for any reason, including tourists, locals, staff and volunteers.

A copy of Adult questionnaire, in English, is provided in the Appendix 1 and a copy of the Child questionnaire in Appendix 2.

Estonia – Lahemaa National Park and Korvemaa Nature Reserve

Dates visited: 19th -24th May 2017



Estonia has a population of approximately 1.3 million people in a country covering an area of 45,227 km². This is roughly comparable with the landmass of Denmark or Switzerland (Population 5.7 million and 8.3 million respectively) (Visit Estonia, 2013). In England, the Sheffield Metropolitan Area alone (including Doncaster, Rotherham and Chesterfield) has a population of over 1.5 million (Office for National Statistics, 2017).

Forest covers 50% of Estonia's land area with mire and bog making up a further 7%. There are over 2,200 islands, including inland islands, 3,800 kilometres of coastline and this small, sparsely-populated country is bordered mostly by water, sitting on the Baltic Sea and with Lake Peipus, the largest trans-boundary lake in Europe, dominating the Russian border. A total of 18% of the entire land mass is designated national park or nature reserve (Visit Estonia, 2017).

The natural world is entrenched in Estonian culture. Wild-caught and foraged foods are integral to the local cuisine including in modern high-end restaurants. People have a right to roam freely in the daylight hours and many outdoor activities such as canoeing and camping are widely permitted although there are certain restrictions within protected areas. Camping areas, nature centres and cabins are ubiquitous across the country offering plenty of options for people to stay close to natural areas at an affordable price.

Lahemaa National Park is an easy drive or bus ride from central Tallinn and is a popular destination for weekends away, with many camping, cabin and accommodation options available in, or close to the park. Lahemaa is the oldest and largest national park in Estonia; established 1 June 1971, with an area of 74,784 ha of which a third is marine. Lahemaa is 73% forest cover but there are also the coastal habitats, meadows, 3,425ha of mire and a network of waterways (Environmental Board, 2017). Created to preserve, protect,

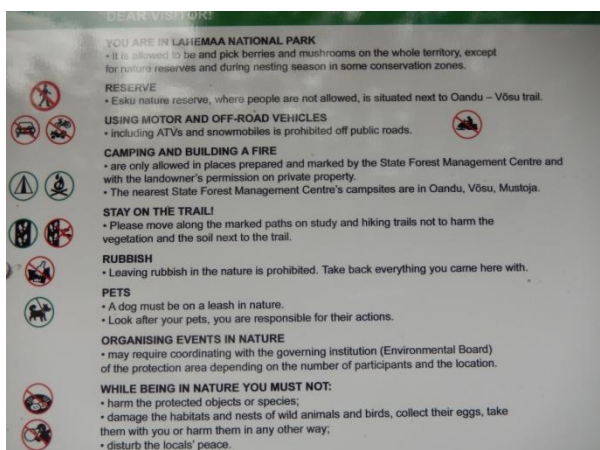
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restore study and raise awareness of the landscape and natural areas of Northern Estonia, the site is now part of the Natura 2000 network (Environment Board, 2017). Central to the park are the three manors, Palmse, Sagadi and Vihula which attract many visitors. The population of 3600 swells many times over during the summer months. Palmse Manor is also home to the park information centre and a short drive from the Oandu Beaver hike where the tracks, signs and, if you are patient (and/or lucky!), beavers themselves can be observed. Lahemaa is home to several protected bird species including black woodpecker and western capercaillie as well as large predators such as bears and wolves, although these are extremely elusive. Viru Bog is a particularly popular area within the National Park, with many tourist tours stopping here. The 3.5km long boardwalk and sky tower are popular with visitors and locals alike. The clean, cool bog lakes are also a popular spot for wild swimming. There are many study and hiking trails spread around the national park, with additional features and interpretation.

The Estonian Environment Board acts as the administrative authority of protected areas, including Lahemaa, whilst the RMK (State Forest Management Centre) is responsible for visiting arrangements and the nature centres in Lahemaa and Korvemaa.

Lahemaa is well equipped for visitors with several nature centres and/or information points scattered around the park. At all major entrances, information boards are present featuring maps, rules and regulations (code of conduct) and information about the nature of the area in both Estonian and English. The areas are clearly marked and explained; 0.1% is strict nature reserve where visitors are not permitted, 23.3% is Conservation Zone where some activities are restricted and visitors may be excluded at certain times of the year, the rest of the area is Limited Management Zone where visitors have the right to roam but are expected to abide by the code of conduct to prevent damage to the environment (Environment Board, 2017).

Dry toilet facilities are provided in several popular locations. Camping areas, designated fire areas are available across the park and well marked on the maps displayed. Camping and fires are not permitted outside of these designated zones. Walking routes are well made and generally well maintained although in some places even relatively new routes have suffered damage primarily from fallen trees. Different kinds of routes are provided around the park including boardwalks, nature trails with additional interpretation and longer hiker trails marked with painted marks on trees and rocks.



Large and informative information boards provide a sense of entrance and ensure visitors are fully informed of how to behave and the facilities available to them. The Code of conduct is comprehensive and fills the entire right-hand side of the board in fairly small type, which means visitors are unlikely to read it in its entirety. However bold titles and images do help break up the text and guide visitors to appropriate sections of the information.

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Shorter nature trails such as the old growth forest walk and the Beaver trail are maintained with walk ways and illustrative information points dotted along the route.



In popular areas, such as Viru Bog, the interpretation is adapted to a wider audience and the code of conduct reinforced with simple and appealing signs. This character is used to illustrate important instructions around the route, as well as highlight interesting features such as the unusual bog plants. Viru Bog is one of the most accessible areas and features in many day tours from Tallinn, it is one of the few area where there is also evidence of antisocial behaviour such litter, evidence of fires on the boardwalk, and cycling in inappropriate areas.



Bins, fire pits, fire wood, water, dry toilets and designated camping areas are provided and well marked on the maps. Several sky towers are dotted around the area and provide a focal point for walks. The entire area

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appears well maintained with limited littering (some in laybys and around Viru Bog) and evidence of illegal fires of camping only present in the most popular areas.

Nearby, the Korvemaa Nature Reserve comprises of forested areas, mires, bogs and lakes with a network of roads and hiking trails through the reserve. It is easily accessible by car or train from Tallinn and surrounding towns and villages. The set up and signage is very similar to Lahemaa although the code of conduct does vary slightly and the area is much smaller.

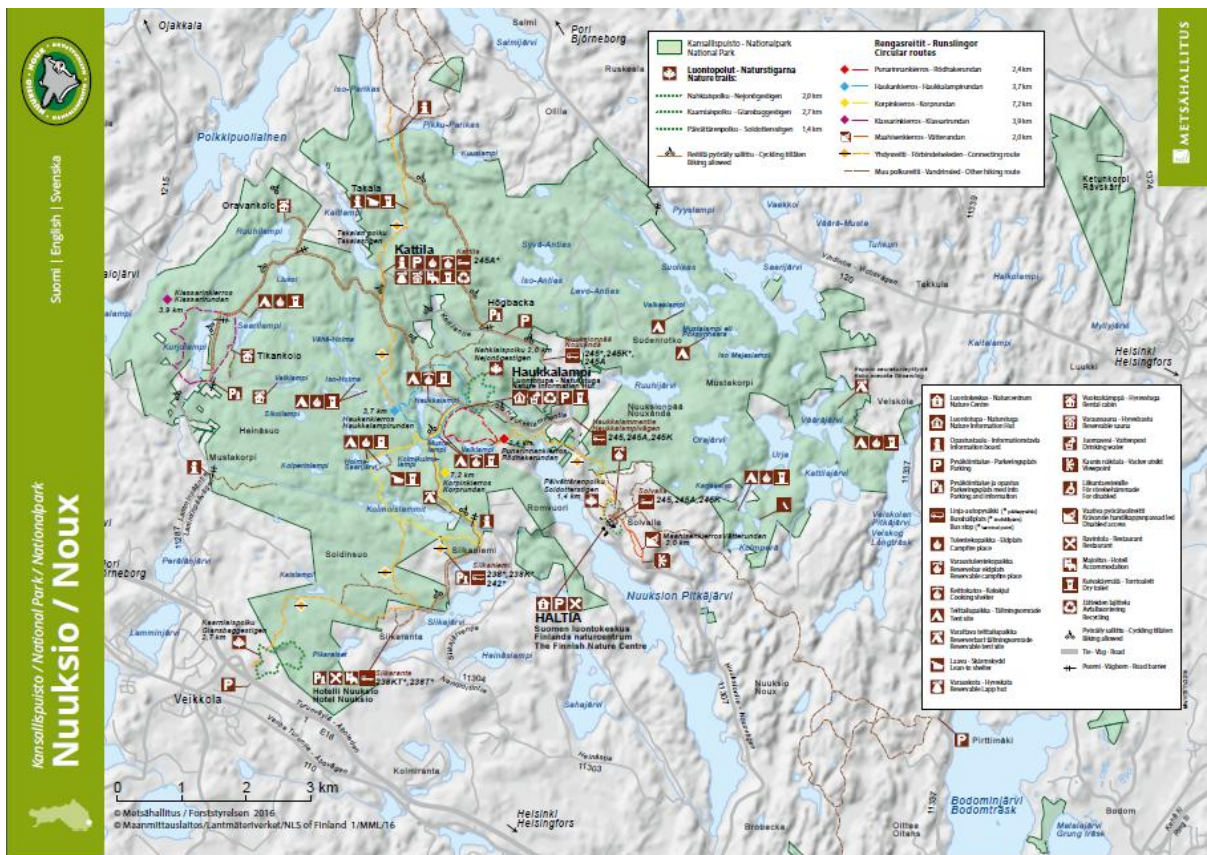
Community involvement and widening participation

The first section of the Viru Bog boardwalk and lower level of the sky tower are wheelchair accessible. In some areas wide and well maintained routes are accessible while information centres are staffed and able to provide further information.

Junior Ranger camp is held once a year in summer at each of the five national parks, followed by two seminars in autumn and spring. The Environment Board run regular school sessions and sometimes in-school visits for smaller schools, these are all free-of-charge to schools although they must cover their own costs, such as transport. Organisations such as the Environmental Investment Centre will occasional run grant schemes. Additionally across Estonia there are a wealth of nature centres open to visitors and running events, as well as Nature Houses where groups can stay for longer periods. Estonia is a country rich in natural spaces and few in people so even for city dwellers nature is highly accessible.

Finland – Nuuksio National Park

Dates visited: 25th – 29th May 2017.



Finland is comprised of 10% lakes and almost two-thirds forest and is the least densely populated country in Europe. The majority of Finland’s 5.4 million people are concentrated in the South of the country leaving vast areas of the northern wilderness very sparsely populated. Like Estonia and the rest of Scandinavian, nature is ingrained in the Finnish culture, cuisine and design. “Everyman’s Right” is a concept integral to Finnish cultural and encompasses the right to roam, wild camp and forage for wild foods. However there are restrictions in protected areas such as national parks and nature reserves and an overarching responsibility not to cause disturbance or harm (Ministry of Environment, 2017). It is estimated that 1 in 5 Finns own a holiday cabin but in practice many Finns have a cabin within their family network that enabled them to enjoy regular stays in nature (stat.fi, 2017).

Nuuksio National Park is a relatively small and young park; at 53km² and established in 1994, but it is a true taste of wilderness and is home to red-throated diver, moose and the densest population of Eurasian flying squirrel in Europe. The landscape of lakes, marshes, valleys, gorges and dense woodland crams in a variety of habitats and topographies. Like all the National Parks of Finland (and many other protected areas including strict nature reserves), Nuuksio is managed by Parks and Wildlife, Metsähallitus Natural Heritage Services and receive funding from central government. Because of this state support, they are restricted in the ways in which they may earn additional funding; for example, they cannot receive donations. Parks and Wildlife are able to demonstrate that for every £1 invested they produce £10 of value, additionally they support many recreation jobs and nature-based companies. Enterprise and innovation is heavily supported by the Finnish government and many of the services provided in Nuuksio are privately run such as the trail guides, adventure sport companies and restaurant within Haltia. The restaurant serves an inspiring menu of seasonal, locally sourced and foraged foods and is a fantastic example of what can be achieved to

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demonstrate low-impact living in natural areas. Partnership working with organisations such as the scouts also work well; the Scout movement run the Haukkalampi Nature Information Hunt on a lease.

Within easy reach of Helsinki by car or public transport, Nuuksio is a popular day trip and sits alongside the Haltia Nature Centre (www.nationalparks.fi, 2017). Public transport is promoted as the best means of arrival on information leaflets and external advertising. There are also plenty of car parks around the park, all of which are free and the most popular fill up quickly at weekends and holidays.

The Haltia Nature Centre is a showpiece for all the National Parks in Finland, in excess of 100,000 people visit annually with 80% of those arriving from Helsinki and Espoo. The centre is cleverly designed to offer an interactive and immersive experience as well as comprehensive information about the 39 national parks scattered across Finland. The centre is ideally located adjacent to Nuuksio, inspiring visitors to go straight out and explore a national park for themselves. Public events, guided walks, exhibitions and nature days are organised from Haltia.



The park Code of Conduct is presented on widely available leaflets and information boards across the park. Persuasive phrases such as “Help to protect nature by following the park regulations” and “Please respect nature” are used to welcome visitors and endear visitors rather than present an authoritative voice. Regulations are presented in clear bullet points on all literature. Friendly cartoons are used to illustrate the code of conduct on the information boards which are present at most major entrance points, alongside maps and information about the trails, conservation work and wildlife. The code of conduct addresses day visitors but also highlights other key points such as larger events for which permission must be sought (events over 200 people must be based outside the National Park).



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Two types of designated fire area are provided and all are marked on the maps and provided with fire wood to prevent harvesting of the dead wood habitats. Open fire pits and closed fire bowls with chimneys are scattered around the park. At times of high fire risk only the closed fire bowls may be used; the visitors are responsible for checking the fire forecast and ensuring they light fires only in safe and designated areas, this information is also displayed at key entrances such as Haukkalampi. In the event of a wild fire by negligence the person who lit will be held legally responsible. Campfires outside of the designated areas, particularly around the lakes and scenic spots during busy holiday periods are not uncommon.

Dry toilets are readily available at designated camping sites and entrance points. There are even saunas in some places! Bins are not provided within the park - with the exception of the welcome hut which has extensive recycling facilities – visitors are expected to take out any litter they bring in with them and informed of this on signs and leaflets. Facilities are very well maintained, in part due to a government funded program which employs ex-convicts in socially beneficial work.



The networks of trails are clearly marked on the maps and signposted throughout the park, but visitors also have the right to roam freely around the park. Within the park, trails are marked with small wooden squares attached to a tree or post in a diamond shape. Different colours are used to differentiate between the various routes. A benefit of these markers (rather than painted directly on trees as seen in a number of places) is that they are not obscured by snow in winter – when the trails become popular with cross country skiers. They are also easy to move if the route changes slightly due to peoples' preferences, or natural changes such as fallen trees. Many of the more popular routes are surfaced or have boardwalks but deeper into the park the routes are left to nature. The vast network of desire lines and animal tracks can lead to confusion where the waymarks have faded but visitors are advised to bring a map and compass for off-trail hiking.

Rangers don't have the authority to enforce laws but take a conversational and welcoming approach when speaking to members of the public. Common issues in the park include illegal fires, dogs off lead and litter, especially in popular areas. Staff have noticed an increase in some of these issues since losing part-time weekend patrol Ranger positions, recognising the importance of having staff presence on site.

It is clear to see from the design of the trails, placement of facilities, leaflets and information boards the amount of knowledge and thought that has gone into designing visitor facilities at Nuuksio. Consequently Nuuksio is visitor friendly, welcoming and easy to navigate whilst preserving the sense of wilderness and without compromising on high quality habitat and wildlife management.

Community involvement and widening participation

Junior Ranger camps are run yearly and ongoing involvement is encouraged with sessions run throughout the year. Recruitment is targeted at schools and Junior Rangers take part in all sorts of activities including guided walks and nature restoration tasks. Youth are engaged with activities such as volunteering to help at events.

Volunteering is relatively new in Nuuksio, with willing volunteers usually concentrated near cities and not necessarily where the work is located, making regular community volunteering difficult to organise. Several volunteer camps have been run as have working holiday schemes in addition to some regular volunteers who help with biological recording including groups such as moths.

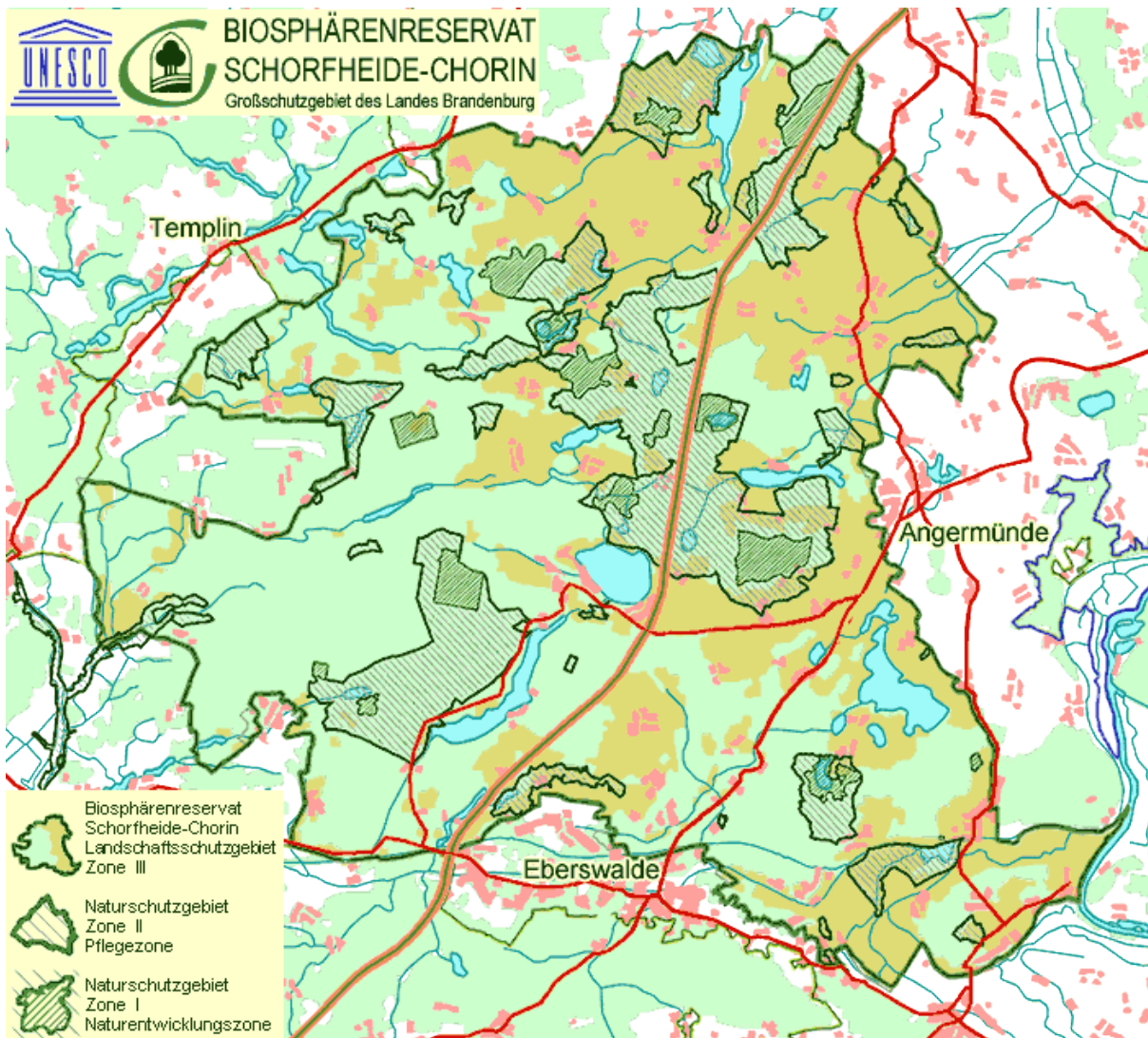
A large number of field teachers are based at Haita, who work alongside school teachers to deliver free outdoor learning sessions on topics such as old growth forest, bird life and biodiversity. This kind of learning is encouraged and relatively well funded at a governmental level. Both Education and the Parks and Wildlife department are government funded so this perhaps helps facilitate a coordinated response to environmental education.

Some of the day-to-day manual work necessary in the running of a busy park; such as, emptying bins, chopping fire wood and trail maintenance, is carried out by ex-convicts. This government funded scheme places convicted criminals in socially beneficial paid work as part of their rehabilitation into society. This mutually beneficial programme involves some of the most vulnerable members of society in the protected area and provides an affordable way to meet the demands of a busy National Park. People taking part in the programme gain work experience but also experience the health and wellbeing benefits of time in nature.

The area around Haukkalampi, Kattila and Haltia are wheelchair accessible.

Germany – Schorfheide-Chorin Biosphere Reserve

Dates visited: 12th June – 15th June



After exploring two countries with sparse populations and entrenched engagement with nature, I was keen to visit countries that shared more features in common with the UK. Germany and Switzerland are both countries which, like the UK, have largely urbanised populations and limited natural areas - increasingly under pressure from agriculture, urbanisation, invasive species and fragmentation. However, despite increasing pressures there are still large areas of spectacular countryside and wilderness, as well as exciting stories of conservation success like the natural re-colonisation of the wolf.

The Schorfheide-Chorin Biosphere Reserve is located in the Brandenburg region of Germany, known for its rich history and countryside, popular among holidaying 'Berliners' (Visit Barnim, 2013). Biosphere reserves are protected zones for sustainable development, established by UNESCO. The aim of the programme is to secure livelihoods, communities and food production for generations to come by working in line with nature and preserving species and habitats. Education and long-term research are central to the programs (schorfheide-chorin.de, 2010).

The habitats of the Biosphere reserve are varied and marked by centuries of human use, with 230 lakes scattered through the area. In the eastern region of the reserve, arable farming and grasslands dominate, the western areas are heavily wooded including beech forest, alder carr woods and pinewood plantations.

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Around 18% of the forest cover is deciduous or mixed and 30% coniferous, the near-natural beech forests are strict reserves and were added to the UNESCO World Heritage List in 2011 (schorfheide-chorin.de, 2010. Visit Barnim, 2013). Some areas are designated as strict reserves, where access is restricted to designated routes and there are nature reserves such as that adjacent to the Blumberger Muhle, where there are trails and interpretation around an area protected for nature. People have a right-to-roam within forested areas of Germany, except where a statutory designation overrides this, such as core zones or strict nature reserve protection. The Biosphere is divided into the development zone (Reserve Zone III) which cover 101,410 ha and is an area of sustainable development and land use; the buffer zone (Reserve Zone II) is 24,103 ha of nature preserve areas home to osprey, white tailed eagle and European fire bellied toad; finally the core zone (Reserve Zone I) is 3911 hectares of the strictest protection when visitors are not permitted to access, they include areas of pristine moor and forest (Ministry of Environment, Health and Consumer Protection of the Federal State of Brandenburg, 2013).

Organic farming within the biosphere reserve currently sits at an impressive 32% compared with a federal average of 6% (schorfheide-chorin.de, 2010). There are many wonderful examples of organic and ecologically sound enterprises across the reserve including cafes, vegetable box schemes, heritage gardens and farm shops. The Biosphere Reserve authority administrates a certification scheme which is available for local producers of products or services, including food, alcohol, restaurants, wool etc. The certification allows producers to charge a premium for quality products and offers an incentive for local producers to strive to the standards required for certification. Producers do not have to be strictly organic but they do need to fulfil a set of criteria which includes ecological requirements.

There are five information points at hot spot areas within the reserve and 13 rangers. Rangers belong to state run foundation, not the local protected area administration so there is a lot of collaboration between staff from different regions and reserves. This is not necessarily the situation in other protected areas as it varies across states and protected areas. Funding comes from a variety of sources including state funding, migration funds (from businesses) and foundations which receive and disseminate charitable donations for certain projects; for example, Stiftung NaturSchutz Fouds Bradenburg.



Organic farming results in an increase in diversity of wild herbs when compared to conventional farms, including Red-listed Endangered Species, such as the Night-flowering catchfly (*Silene noctiflora*) and the Forking Lankspur (*Consolida regalis*) (schorfheide-chorin.de, 2010). Surrounded by sensitively farmed areas, the NABU Blumberg Muhle provides interactive walking trails, information boards and usable education areas within a reserve rich in nature. Beavers, pond terrapins and numerous wading birds are present on site.

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Heritage breed livestock are used to manage the habitats at Blumberg Muhle and serve as an illustration of what can be achieved with low impact farming methods.



The visitor centre itself is constructed to mimic a tree stump, with numerous eco-friendly features. The centre has a cafe and interactive exhibition, with library and event spaces and themed events and exhibitions throughout the year. Lots of resources are available from the centre including leaflets about recycling, composting and reducing plastic waste.



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Interpretation and information boards vary across site in design, language and the information provided. This is in part due to the variety of organisations and private individuals that own and manage different areas. Due to the scale and nature of the reserve, there are no focussed points of entry so it is difficult to ensure all visitors encounter information, such as codes of conduct, and even some residents are unaware they live within a biosphere reserve! However, the boundaries are marked with the owl logo, which is recognised across Germany as the emblem of protected areas. The strict reserves are also well marked. The majority of information is displayed in German, with English and Polish information available at a select few points, this reflects the audience living in and visiting the area.



The Schorfheide-Chorin Biosphere Reserve is an impressive example of what can be achieved in a landscape created to meet the needs of both people and wildlife. It is not without its issues, in such an expansive area it is impossible to ensure everyone entering the area knows or abides by the regulations. Some areas, particularly close the towns are more prone to littering and occasionally fires are lit outside the designated areas. Dogs off leads in restricted areas can be a problem, but as with all issues the rangers take a reasoned approach and work to engage locals and visitors.

Community involvement and widening participation

The biosphere reserve is a living landscape with both people and nature at the heart. Working alongside communities to promote sustainable development is central to the ethos of biosphere reserves (German Council for Land Stewardship). The administration and rangers work hard to engage stakeholders and community members, incentivising pro-environmental action; for example, through the brand scheme. Enterprise and local friends groups are well supported. Local involvement and education is a key strategy for the biosphere reserve. Volunteers of all ages are engaged in lots of areas of the biosphere including working at the administration and at the Blumenburg-Mühle visitor centre and nature areas. Government funded volunteer programmes of a year or 6 months ensure volunteering is an accessible option from young people of all means, many who take part in environmental placements.

Almost every protected area in Brandenburg has its own Junior Ranger group, with a camp held once per year for all the groups together and where the Junior Rangers receive their uniforms. Groups run regularly, weekly or monthly, for middle school ages 8–14 years. The Rangers would like to be able to offer something for the older age range as attendance often tails off around 15 years of age when the Junior Rangers are in Secondary school.

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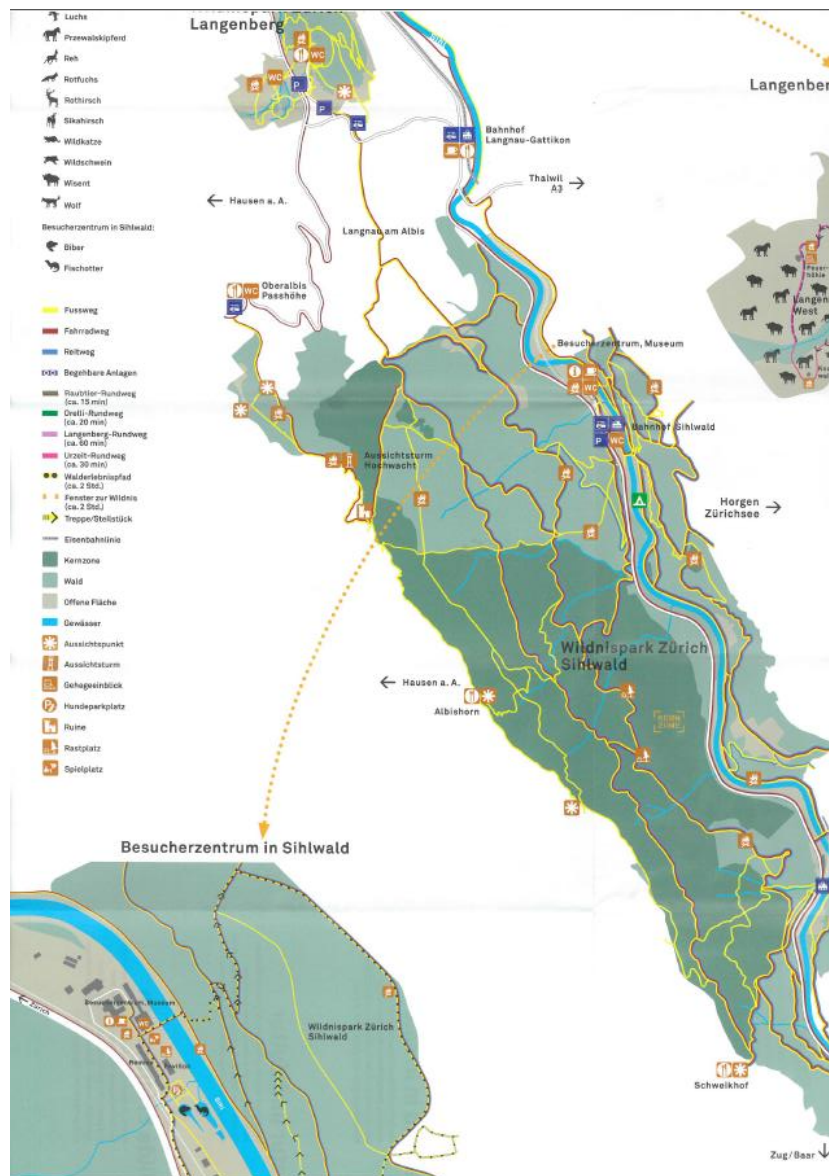
Education is central to the aims of all biosphere reserves; this includes public education through events, guided walks, visitor centres and exhibitions. In addition to this there is work with local school, including programmes to regularly engage young people from less privileged areas. There is even a boat equipped to take school groups out on educational trips, testing water quality etc.; however, the running of this has suffered from some cuts to funding.

There are numerous adaptations for disabled visitors across the Schorfheide-Chorin including accessible routes and visitor centres. Rangers are occasionally asked to run specialist events, such as guided tours, for visually impaired people. There have also been efforts to engage refugee groups. This has been logistically difficult and very time consuming but there is hope that future initiatives will succeed. The Biorama project is an enterprise which deserves particular mention. Thoughtfully designed, this sky tower and adjoined art gallery are one couples' passion project, built at the heart of the Schorfheide-Chorin. The tower and gallery are both fully wheelchair accessible. Additionally, they work closely with refugee groups and minority groups based in Berlin to give as many people as possible an opportunity to enjoy the Schorfheide-Chorin.

Switzerland – Wildnis park Zurich and Griefensee Nature Reserve

Dates visited: 16th June – 21st June

Wildnispark Zurich, Sihlwald Forest



Established in 2009, Wildnispark Zurich is a fantastic concept combining wild forest, visitor centre, museum and animals. It is free to enter (except museum) and less than an hours' travel from the centre of Zurich. The combined area is 12km² and receives more than half a million visitors every year. The Langenberg animal park houses native or extrapolated native animals (such as bears, wolves, hares and boar) in woodland enclosures, offering people the opportunity to see iconic species close up in a natural setting. The Sihlwald Forest is beech dominated forest; formerly exploited for timber, the area is now left to natural processes creating an area rich in dead wood and ground flora, forming part of one of the largest contiguous forests of the Swiss Plateau. The Core Zone cover 41% of the forest, in this area, visitors are restricted to the paths and fires and foraging are not permitted.

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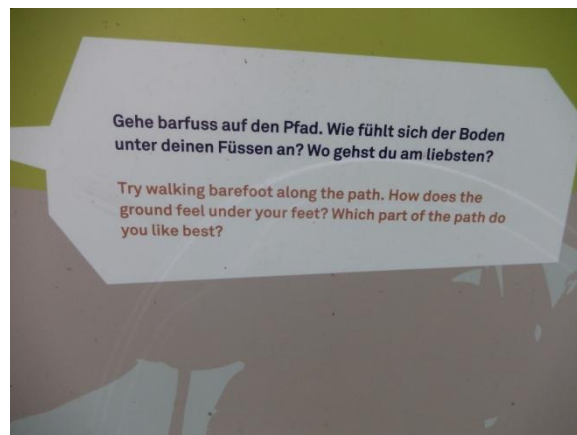
The Schiwald Forest was incredibly easy to navigate. A network of trails is well marked with finger posts which positively reinforce the permitted use (restriction signs are avoided except where a reactive sign is required in the Core Zone). There are 73 km of footpaths, 59 km of cycle routes and 55 km of bridle paths as well as two adventure trails with additional features for children (Swiss Parks, 2017). Trails across Switzerland are also marked with recognisable yellow diamonds. Large welcome signs featuring the site map and code of conduct are at every entry point and additional signs of the same design are placed strategically at points of interest and around the Core Zone. The Core Zone is also marked with painted trees ensuring it is difficult to remain ignorant of the bounds of the protected area.



A reactive sign has been used in an area where visitors are regularly trespassing through the core zone. Patrols are focused in these areas to enable Rangers to have face-to-face conversations with visitors and explain the value of respecting the protected area. Rangers patrol regularly, maintaining the routes and speaking to visitors. There are around 40 staff involved in running the park including rangers, educational staff and seasonal part-time posts. The code of conduct is displayed on all the welcome signs in English and Swiss German with illustrations; it is very user friendly and broken down into six key messages.



People-counters are hidden in tree trunks along busy routes. The left-hand image (above) shows the people counter set into the trunk. The right-hand image is the trunk as seen from the path, two holes are visible these are at different heights to count horse riders and walkers. Pressure counters buried below the paths are also be used to count cyclists. This is a brilliant method of gauging the number of visitors and different users in an open site. In addition to visitor research the park is open to research proposals and a total of 90 research projects have taken place in 40 years, including measuring the movements of deer and their responses to human disturbance, invertebrate studies and other ecological research.



Around the site there are designated fire areas with free fire wood provided, a sightseeing tower and sites of historical interest. The visitor centre features a restaurant, shop, museum, event space, parking (including for horses!), toilets and a natural play space. The family nature trail extends for 1km, near to the visitor centre with interactive natural play features such as a wooden xylophone and family friendly information to engage younger visitors. Bins are not available as these were removed (except at key locations) to reduce the work load for the rangers. This has worked well and, although littering still occurs, it tends to be very close to parking areas. "Robo dogs" - dog poo bins with bag dispensers – are ubiquitous across Switzerland, including on main routes through the park, so dog waste is not an issue.

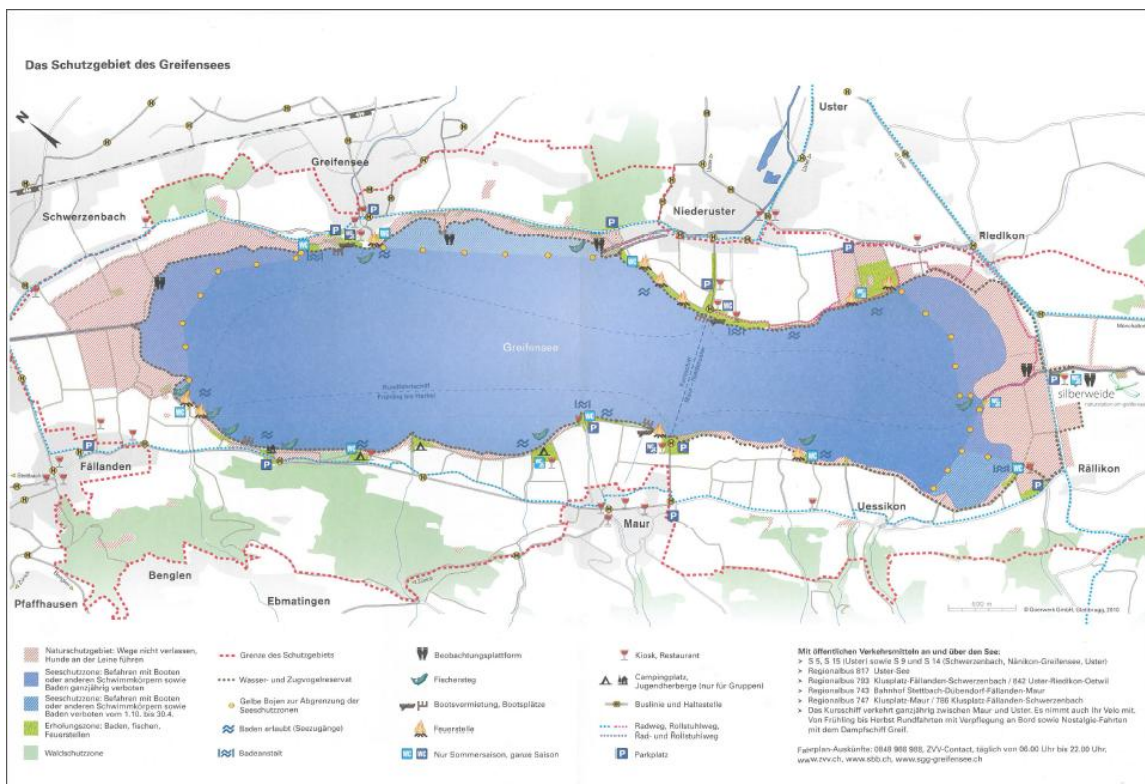
Community involvement and widening participation

Free school visits are available to local schools. Free talks and tours are also run regularly and open to all.

Switzerland has a similar government-funded programme available to young people which ensure people of all means can take part in long term volunteering opportunities. Additionally corporate groups sometimes join the rangers to take part in volunteer days.

The Swiss model of bottom-up decision making and regular votes on issues means that people have a say in all aspects of their country, including the natural areas. National Parks; for example, cannot be formed without the will of the local population and stakeholder engagement is hugely important at all levels.

Greifensee -stiftung Lake



The Grifensee is within the Canton of Zurich and easily access by public transport from central Zurich, making it a popular day trip but it is also popular with locals in the surrounding urban areas. It is a popular recreation area with spaces for swimming, boating, fishing and BBQs. Additionally it has a number of areas dedicated to wildlife where recreation activities are restricted. In addition to the lake itself the area immediately surrounding the lake forms a network of reaction areas and wildlife rich habitats such as wet grasslands and reed beds. A team of rangers actively patrol the site on a daily basis, welcoming visitors and enforcing restrictions such as ensuring dogs are on leads, people aren't feeding wildlife and people are abiding by correct fishing laws. Rangers have the backing of the police and are able to record details of offences in order for the police to issue fines where there is a breach of law. Rangers also have an important role in education and run the Junior Rangers groups across the two lakes. Ranger carry an i-Pad and use the "I-Ranger" app that has been developed on site, to record all interactions, both negative and positive, and all the data can then be collated and analysed.

Visitor behaviour and best practice visitor services in European protected areas



The owl and leaves symbol is recognised as a nature protection area. Simple symbols are used to illustrate the regulations around site, with a more comprehensive code of conduct displayed on information boards and maps.



Rolle Ranger (the Ranger cartoon character) welcomes visitors to site, has a presence on social media and pops up in user friendly signs to give visitors tips. Rolle Ranger offers positive reinforcement by pointing out good places to watch wildlife quietly, for example. Dog waste bins are readily available and the entire route around the lake is surfaced making it popular with cyclist and roller-skaters, the area is an interesting mix of urban and nature.



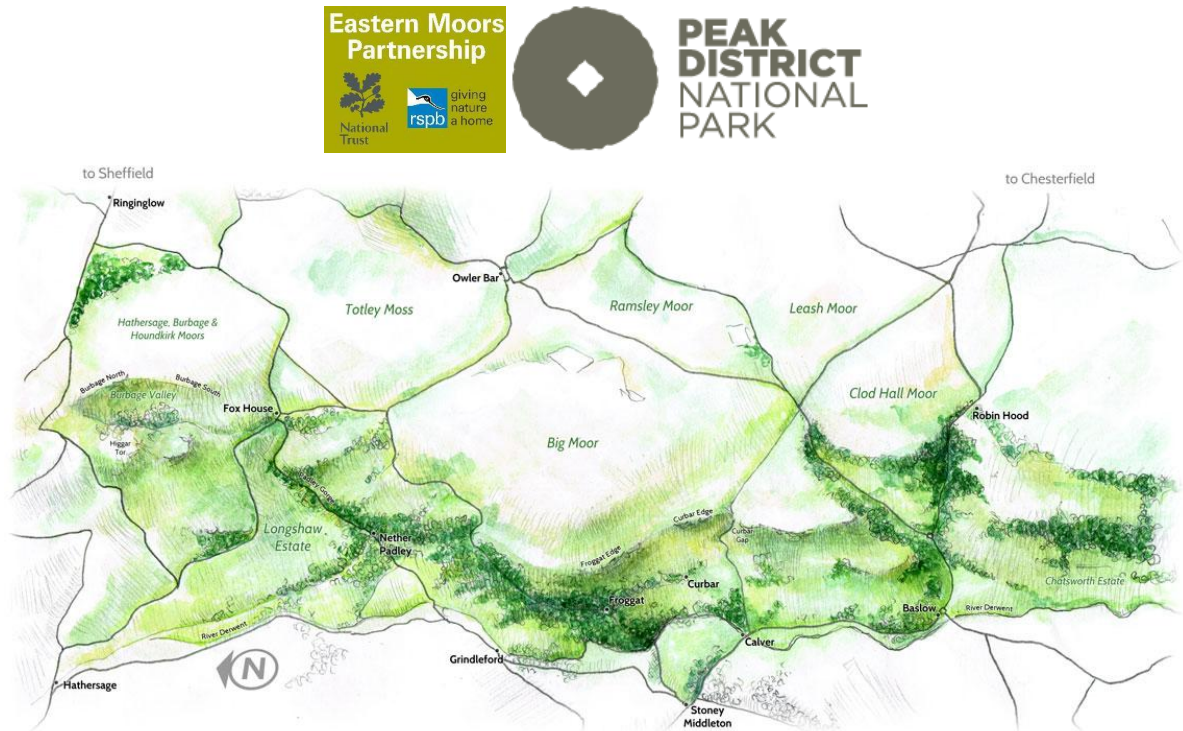
Occasionally reactive signs or barriers are needed where persistent damage is caused in the nature zones.

Community involvement and widening participation

“Junior Rangers” is a protected brand in Switzerland and a number of criteria must be fulfilled to start a group including, including the need for a professional ranger as a group leader. The scheme is incredibly popular and, although there is an annual charge, it is nominal to ensure participation is open to all. Across the two lakes there are 7 groups, around 70 children and a waiting list so it is a very popular scheme! Junior Rangers are aged 7-15 years old and take part in immersive nature activities and environmental education.

The urban setting and surfaced circular path ensure that lake Griefensee is wheelchair accessible in many areas, including many of the best wildlife viewing spots.

England – Eastern Moors in the Peak District National Park



The Peak District National Park is splintered into private ownership (including areas used for agriculture and as shooting estates) and areas managed by various charitable organisations including the RSPB, Wildlife Trust and National Trust. The National Park Authority oversees all activity within the park including issuing planning permission and directing the management plan of other land agents.

The Eastern Moors Estate is managed in partnership by the RSPB and National Trust, the UK's two largest conservation charities. The area covers 14 square-miles of upland heather moor, peat bog, upland meadow, deciduous woodland (primary oak and birch) and several small coniferous plantations. Almost the entire area is designated as a Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI), and is rich in sites of archaeological importance including several stone circles.

The Eastern Moors is a popular recreation area bordering Sheffield and Chesterfield attracting walkers, mountain bikers, horse riders, dog walkers and it has several internationally renowned climbing sites. There are also several areas across the Eastern Moors that are, unfortunately, known for illegal activities, in particular raves. Littering, BBQs (or open fires), dog waste, fly tipping and vandalism are recurring issues. The Eastern Moors is heavily managed to maintain the habitat and restore areas of degradation. This includes a grazing regime, mowing, felling, ditch blocking as well as maintaining infrastructure such as paths and biological monitoring throughout on site. The vast majority of the work is done by wardens, rangers and a team of volunteers.

Visitor behaviour and best practice visitor services in European protected areas



Signs are generally kept to a minimum in order to preserve the wild and open feel of the site. Logos appear at every access point in addition to 'Take the Lead' signs which thank dog owners for behaving responsibly and keeping their dogs on leads during bird breeding season from March 1st –July 31st.

Rubbish bins are provided in the car parks and dog waste bins have recently been trialled in some areas due to an increasing prevalence of this issue.



Occasionally, reactive signs are installed to inform users of planned works, sensitive species or ask them to refrain from certain actions e.g. "Walkers only please" in areas commonly trespassed with mountain bikes. The language used in all on-site communication aims to thank, providing positive reinforcement rather than an authoritative tone. Currently there is no Code of Conduct displayed on site or anywhere online, although visitors are restricted in what they may do by the Open Access act. Similar to the "Every mans' right" of Finland, Open Access allows people to walk wherever they choose in designated areas of open countryside; they are not restricted to public footpaths. Mountain biking and horse riding are permitted only on brideways. Activities such as BBQs, drones, loud music and camping are not permitted by omission in the Open Access agreement, however nowhere on site is this explicitly stated so visitors are expected to be aware of restrictions before arriving.

Visitor behaviour and best practice visitor services in European protected areas



In addition to the Open Access agreement, which covers the majority of the site, there are a network of footpaths and bridleways across the site. There are a series of adventure trails for families and adult hiking trails available on the website (visit-easternmoors.org.uk, 2017). These are self-guided using leaflets (above) and there is minimal additional infrastructure, such as way marks or sign posts. Events for all ages are run throughout the year included guided walks and drop-in volunteering sessions. There are several car parks, some bins and a weekend-only refreshments van but no other facilities on site, there are no toilets, cafe or visitor centre on the Eastern Moors, although these are provided at other nearby areas of the Peak District including many local businesses. There are several visitor centres placed across the entire National Park which are run by the National Park Authority, who also run camping sites, cafes and outdoor centres.

Community involvement and widening participation

Community is at the heart of the Eastern Moors. The National Park is public owned land so stakeholders must be consulted before major decisions and their input guides the direction of the management plan. Stakeholder forums and open community sessions are held so that people can share their views.

The community is encouraged to help take care of the Eastern Moors by volunteering. This may be with their employer, as part of a one-off event, or by joining the team as a regular volunteer. Families can volunteer at monthly “Muck In” days which are active days for all ages to help with tasks such as path repairs or tree felling. Under 18s can also receive awards for their efforts. The Youth Ranger group is for ages 11-18 years and is part of the EUROPARC Junior Ranger network; Youth Rangers attend every month to learn about ecology or participate in a practical volunteer task.

Local schools are involved on site through the Guardianship School programme; this is a free programme which runs across a school year, the children visit site four times and participate in learning tasks and volunteering and gain an award at the end.

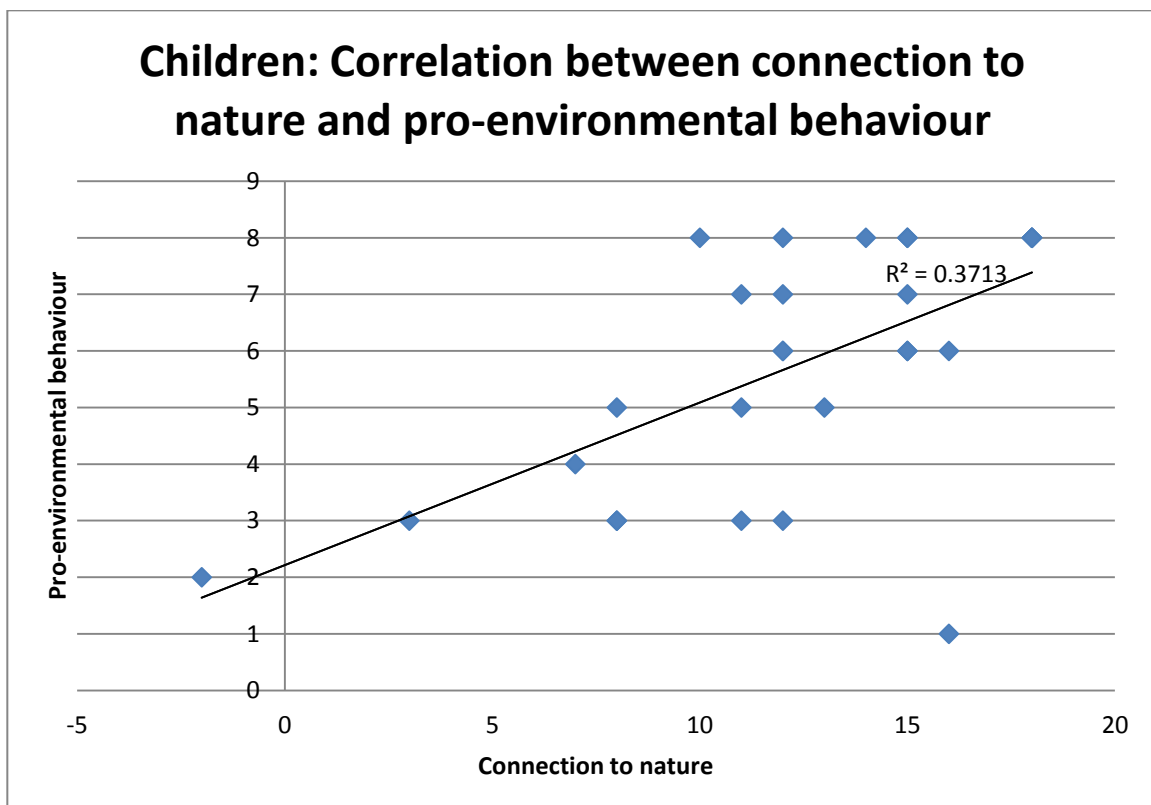
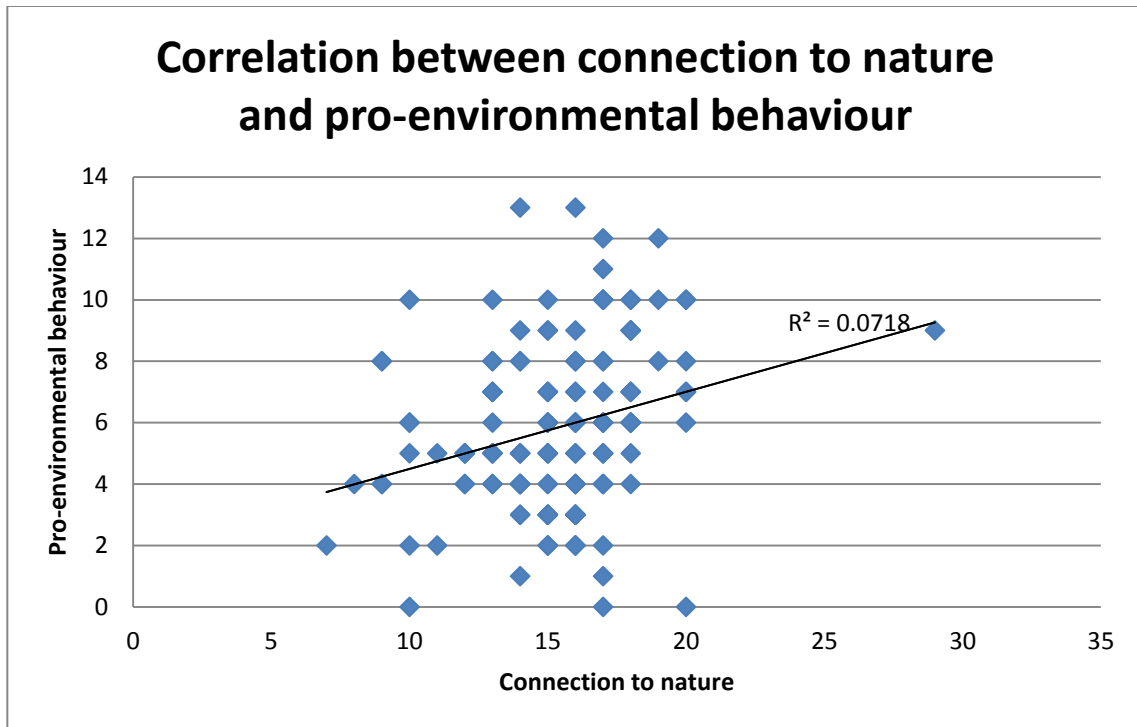
There is one trail which is wheelchair accessible and runs for approximately 2km through a scenic valley. Additionally there are disabled bay parking spots provided at some view points and all the picnic tables and chairs provided near the car parks have disabled access.

Based on previous visitor data the typical profile for a visitor to the Eastern Moors is white, middle class, male aged 45+. Despite the sites proximity to Sheffield, involving minority ethnic groups has proved to be a difficult and this continues to be a challenge for the future, particularly involving these groups in stakeholder meetings..

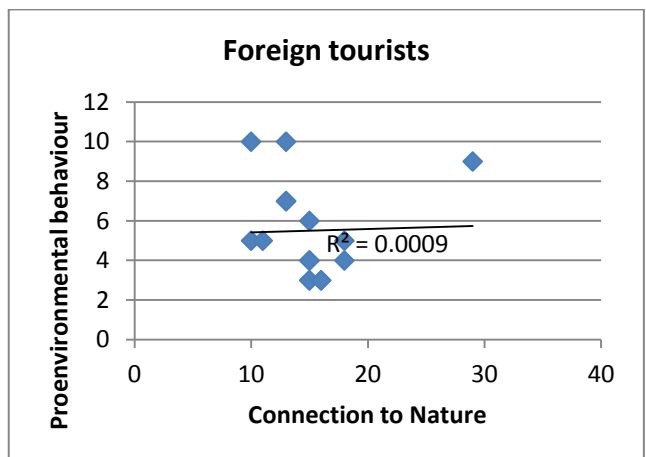
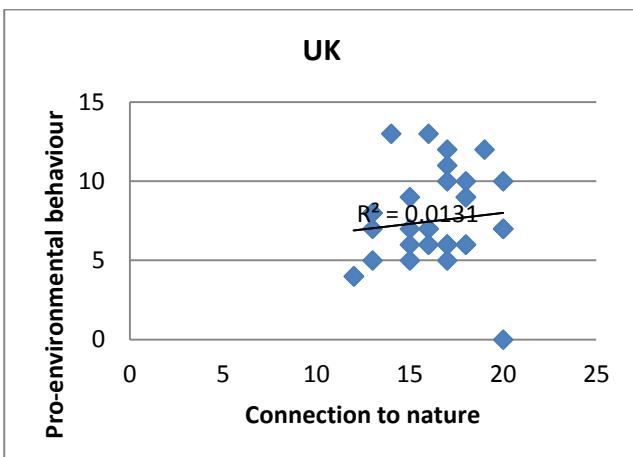
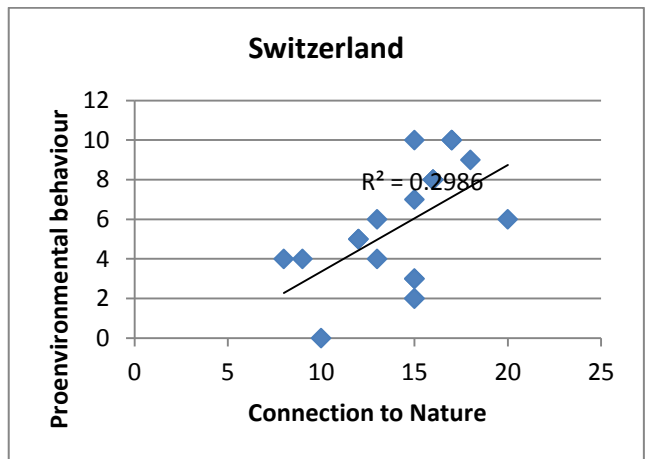
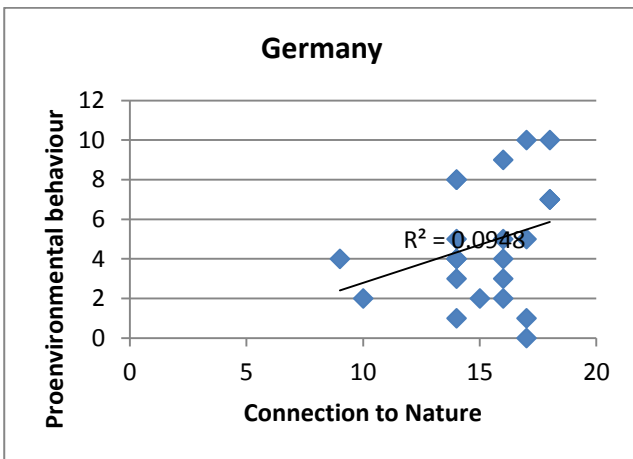
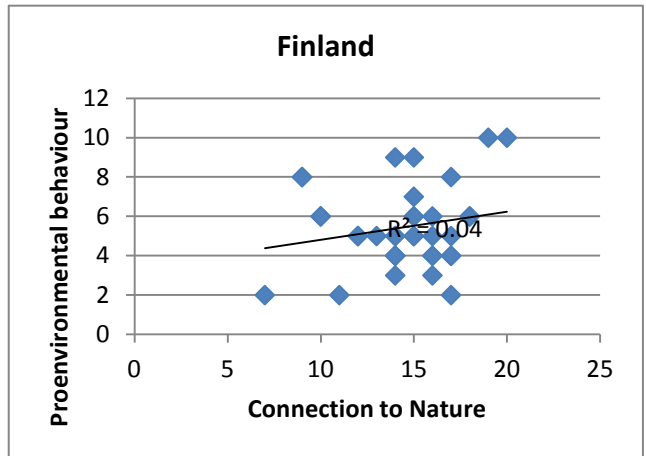
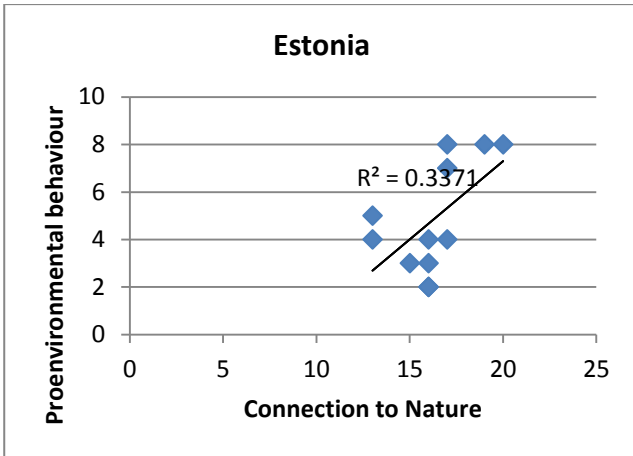
Data Analysis

Connection to nature and pro-environmental behaviour

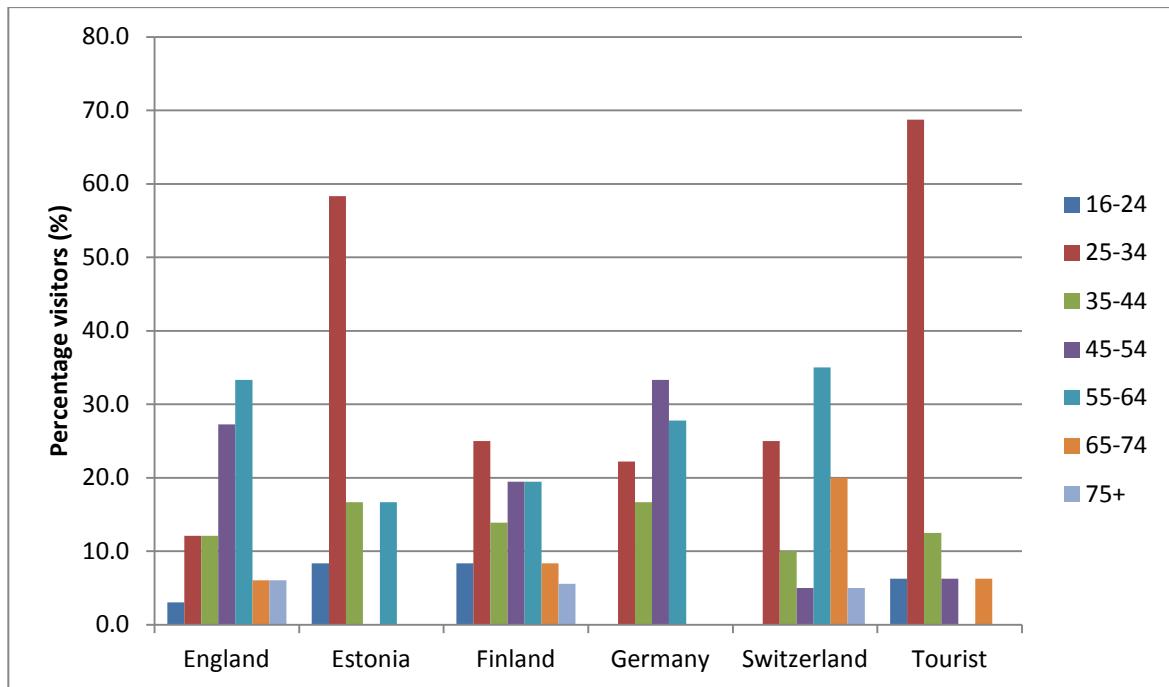
In all countries there was a weak positive correlation between 'connection to nature' and reported pro-environmental behaviour; however, none of these were statistically significant. The correlation between connection and behaviour is much stronger in children than in adults.



Correlation between connection to nature and pro-environmental behavior: Individual Countries



Age, nature and nationality



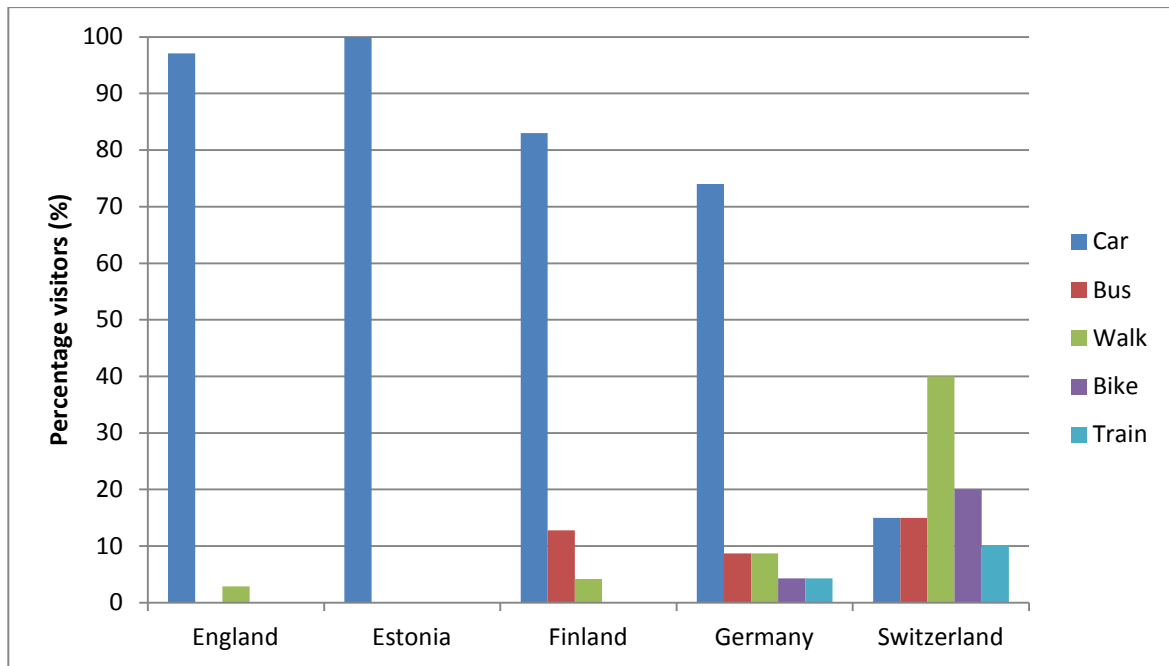
In England, the majority of visitors who participated in the survey were over the age of 45 years. This evidence is supported by previous visitor data from this site including results from a survey earlier this year which suggest the majority of visitors to the Eastern Moors, Peak District are 45+.

Finland had the most even distribution of age categories visiting the protected area, including the highest proportion of under-34s. During the survey period of several days, all the visitors (including those not surveyed) were notable for being mixed in age so I believe this is a fair representation of the visitors during this time period.

In Switzerland there was a notable dip in those aged 35-54 years. A possible explanation for this is because a number of the survey days fell on weekdays when visitors tended to either be older visitors or parents with very young children/babies.

For this graph the tourists were treated as a separate group.

Nationality and transport use



This graph is a striking reflection of the quality and availability of public transport available in the areas visited. Tourists were included in the results for each country.

Switzerland, famous for its efficient and high quality public transport, had the most even spread of transport usage. In part this is also a reflection of the proximity of the protected areas to the centre of Zurich. In England, public transport is relatively expensive, so it comes as no surprise that the visitors almost exclusively arrived by car despite the areas proximity to Sheffield. This is supported by previous research which indicates that visits to the countryside are made by car 89% of the time (VisitEngland). In Estonia, all the visitors surveyed arrived by car; due to the nature of the site and the scale of the area this is unsurprising. Although Lahemaa has good bus links and regular coach tours to the area, it is far enough from Tallinn that many people visit for a weekend or longer rather than a day trip and taking a car offers the flexibility to explore the vast and varied landscape. The biggest surprise of these results is the high car usage in Finland. Nuukisio is easily accessible from central Helsinki by train and bus and the use of public transport is encouraged in the park advertising and literature. A possible explanation for the relative low use of public transport in Nuukisio is that the survey days fell over a weekend and public holiday, many people were arriving in large family groups or with a lot of items intending to BBQ or camp, in this case the use of a car would have been considerably more convenient than arriving by public transport.

In all countries surveys took place at a main access point (or several main access points) close to a car park, the proximity of public transport drop off point varied. It is likely to the results would vary depending on the survey location (for example, had I surveyed at the train station). However I believe these are a relatively fair reflection of visitor transport usage across the parks as in all cases I was in the areas with highest footfall.

Demographics in protected areas

Across all the protected areas, the questionnaires were answered exclusively by white Europeans. Whilst it is not possible to draw conclusions from a small sample size, previous research does suggest that visitors to protected areas tend not to fully represent the ethnic makeup of a country. Whilst not applicable to all countries, in the UK visitors are overwhelmingly white and tend to come from socio-economic groups AB, upper and middle class (VisitBritain). Within the UK, minority ethnic groups make up 8% of the population

Visitor behaviour and best practice visitor services in European protected areas

but only 1% of visits to National Parks with a number of reasons cited for this, including; language barriers, limited transport options, safety concerns and economic difficulties (Natural England, 2011).

It is important that countryside managers continually look for ways to widen participation and access in protected areas for all members of society. In our increasingly diverse world this can bring enormous challenges, but it is important to make provisions for our widening communities both for the benefit of people and wildlife. There were numerous examples across the protected areas I visited of challenges faced, e.g. new residents unaware of fishing or foraging regulations to the detriment of wildlife, or visiting groups refusing to participate in walks and activities due to the distance from a toilet. There are also examples of innovation and success; courses, volunteering opportunities and walks run specifically for refugees in protected areas.

Comments from visitors

An optional set of questions and space for further comments was also included in the questionnaire. This was to allow for visitors to give qualitative information they did not feel was captured in the questionnaire or to explain site-specific points or concerns. Most commonly cited barriers were a lack of time preventing people from enjoying time outside, a desire for more marked walking routes and clear signage, public transport and facilities within protected areas and better protection and funding at a governmental level. Below is a selection of comments that were representative of themes arising from these comments or raised unexpected points and ideas:

“When you have to pay for access, that limits the joy. “

“I’d like to see a limit on the number of people allowed in”

“Like to see more advertising (signage) about how to behave responsibly”

“I don’t own a car, would like better public transport”

“Time and work limits time outdoors”

“I would like more walking trails”

“Political decisions needed to encourage environmental behaviour”

“Even though I work in nature, I can’t get full enjoyment, I need more time.”

“I am already motivated to volunteer and behave in an environmentally responsible manner but I think it should be more in the public focus and politics.”

“I would like to see more signs in the protected area so that people know and understand where they are and how they must behave.”

“I would like to see more government support, better funding, signs and advertising for protected areas. There are always more opportunities to involve local people.”

“I want to see more products in supermarkets that are environmentally produced and clothes. In my local protected area I would like to see less agriculture, less privately owned areas and more space made for species protection.”

Discussion and limitations of survey methods

Questionnaires were kindly translated by staff from the hosting protected areas. In all areas I attempted to introduce myself in the local language, but had a greater success engaging participants where they were able to speak English or I had additional support from staff, as I could better explain the purpose of the study. The questionnaire is very short in English (two double sided pages including the optional questions) and usually takes less than two minutes to complete. However, due to the structure of other languages it appeared considerably longer in other languages, which put some visitors off participating. Additionally some questions which were clear in English appeared to cause occasional confusion in other languages or were less appropriate for the visitors. One question (number 11; concerning volunteering – Appendix 1) was removed entirely from the analysis as it caused confusion in some countries and inconsistent results.

The participants in this study were a self selecting group, in all location there were visitors who chose not to do the study. This was often older adults (due to the language barrier) or a-typical visitors such as young people carrying beers and BBQs into protected areas where these activities were restricted. The results also under represent certain user groups within protected area, as the questionnaire was almost exclusively answered by people exploring the area on foot. It was very difficult to intercept cyclists and other visitors such as those taking part in climbing or water sports. Adults with toddler aged children were also less likely to engage and very few children answered the questionnaire themselves unless they were part of a group such as Junior Rangers.

Attitudes to questionnaires varied between countries. In Finland the vast majority of people were happy to complete the questionnaire, English is widely spoken to a high standard so preliminary engagement was very easy. Switzerland was by far the most difficult country in which to engage participants despite widely spoken English, Swiss people gave the impression of being quite reserved and avoided engagement. Several participants started the questionnaire but decided not to complete it as they felt it was too long.

Although every effort was made to ensure as many questionnaires as possible were carried out over different times of the day, the sample size and time frame is still relatively small for areas which receive thousands of visitors throughout the year. The smallest sample was from Estonia where both protected areas were very quiet, over a third of participants who completed questionnaires in Estonia were foreign visitors. Over half of cars in car parks and lay-bys (over a one hour sample period) had foreign number plates.

As with all questionnaire based research this study is subject to the inherent limitations of questionnaires. Participants may alter their answers consciously or unconsciously due to social desirability, this is effect is seen even when questionnaires are answered anonymously. I am very grateful for the opportunity to have done this research but from a personal perspective, the most profitable aspect of my visit was exploring the different protected areas and spending time with the staff. I learnt an enormous amount from everyone in all locations and I'm looking forward to implementing what I have learnt in my own area.

Conclusions and take home messages

Common themes emerged across all the areas I visited were; frequent fire sites and camping areas, parking is readily available free of charge but public transport is often the most convenient method of access and is usually promoted. Codes of Conduct are standard and always readily available at point of entrance, usually alongside clear orientation maps. The presentation and voice of these codes varied between sites, with some appearing more visitor friendly than others but all provided a clear behavioural expectation. Heavy branding and reactive signage is kept to a minimum in most areas. A high priority is given to patrolling, particularly in Switzerland where on foot or bike patrols and on site presence and face-to-face visitor interaction forms an integral part of a ranger's role. In areas where patrol staff/rangers had been reduced (e.g. due to funding cuts, for example) the difference in on site issues had notably increased, to the detriment of the protected area and remaining staff.

Additionally, all the protected areas experienced similar issues including, illegal fires, litter and out of control dogs. The use of technology in protected areas was also cited as an increasing phenomenon both by visitors and staff; sometimes to the detriment of wildlife e.g. the use of drones but also in some cases with enormous benefits such as the excellent i-Ranger programme developed by the staff at Griefensee. Staff in all areas were keen to find new ways to face the challenges of engaging young people and increasingly international populations, and ways to communicate effectively with all of their visitors.

Volunteering is a strength and point of national pride in the UK. However, it is important that organisations in the UK continue to work hard to ensure that volunteers are utilised effectively and supported fairly without undermining the professional integrity of charity work or exploiting volunteers. This can be a particular issue for young people and graduates hoping to make a career in the charitable sector. National schemes such as those run in Germany and Switzerland to fund people (particularly young people) to engage in social action are a great way to facilitate volunteering.

I found the Schorfheide-Chorin Biosphere Reserve particularly interesting because the Biosphere model is most reflective of the Peak District Park management. Despite being a National Park, the Peak District is heavily used for agriculture, populated by 38,000 people and has no core zone or restricted areas, defining it as an IUCN category V Protected landscape. By most national standards the Peak District would not qualify as a National Park but the management plan and core aims of the Park Authority in many ways mirror those of a Biosphere reserve with an emphasis on providing cultural and economical benefits alongside the protection of nature. The Schorfheide-Chorin was a fantastic example of how this can be achieved.

The questionnaire results suggest that connection to nature is not enough to facilitate pro-environmental behaviours and the long term lifestyle changes needed to protect our planet. Whilst connection to nature is hugely important and does correlate with pro-environmental behaviour, cultural expectations, ongoing education (both traditional and through signs etc.), incentives and schemes are also required to facilitate long term behavioural change in protected areas. Protected areas have an opportunity and responsibility to promote sustainable behaviour both within the area itself and to send visitors home with a sustainable message. Two examples of this are the recycling facilities and restaurant at Hailtia and the shop at Wildnisparc, which sold environmentally friendly products such as reusable coffee cups and beeswrap; an alternative to clingfilm that is considered a niche product in the UK and difficult to find in shops. Additionally, schemes such as that in the Biosphere Reserve which certify and incentivise environmentally friendly production are a step towards empowering local people and preserving landscapes rich in nature.

Evidence from behavioural change research indicates that the actions people take do not necessarily match their original intentions, the "intention-behaviour gap" (Godin, Connor, Sheeran. 2005). So whilst

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intellectually a person may believe in the impact of humans on the environment and be able to identify negative behaviours, and they may also emotionally feel that this is wrong and needs rectifying, they will not necessarily follow through with environmentally responsible behaviour. For example, “I know dogs off leads can harm ground nesting birds and impact chick survival.” “I feel it is important that ground nesting birds are protected and can breed successfully.” “My own dog needs to exercise and it is unlikely that he/she will chase a bird or cause harm, so I am willing to risk it.” In this circumstance the intention is to behave in line with the emotional and intellectual belief does not translate to an actual behaviour, many other factors at the time play a part in the realisation of a behaviour. In these circumstances, it is important for staff in protected areas to recognise ways in which they can bridge the “intention-behaviour gap”. This is why it is so important for staff in protected areas both to understand human behaviour and to ensure pro-environmental behaviour is facilitated wherever possible. This may include; effective on site communication (e.g. such as signs and codes of conduct), recycling facilities, designated spaces for potentially harmful behaviours (e.g. fire areas, dog runs), ongoing education and widely available resources, sustainable products in shops and cafes, well maintained infrastructure to facilitate desirable behaviour (e.g. surfaced paths).

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Appendices

Appendix 1: Adult Questionnaire (English)

Gender

Male Female Other Prefer not to say

Age

16-24 years old 25-34 years old 35-44 years old 45-54 years old
55-64 years old 65-74 years old 75 years or older Prefer not to say

Local or visitor?

Local to this area (<30miles) Visitor from this country Visitor from abroad

Ethnicity origin

White Hispanic or Latino Black or African American
Native American or American Indian Asian / Pacific Islander Other
Prefer not to say

Reason for visiting today?

Walking Climbing Mountain biking Horse riding Camping Site seeing
Wildlife watching Volunteering Adventure sports Dog walking Other

How did you get here?

On foot Bike Bus Train Car Other

Please answer read the following statements and say if you Strongly agree, Agree, Neither agree nor disagree, Disagree or Strongly disagree:

1. Being outdoors is good for my wellbeing/makes me happy.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

2. I appreciate spending regular recreational time in natural spaces e.g hiking, jogging, swimming.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

3. I enjoy watching, studying or photographing wildlife.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

4. I experienced regular outdoor education or recreation as a child.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

5. I have positive memories of time spent outdoors and in nature.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

6. I believe it is important that children experience wildlife and the outdoors.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

7. Nature and the outdoors is an important part of my cultural heritage.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

8. Everyone has the right to spend time in nature and enjoy seeing wildlife

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

9. Humans are part of the natural world.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

10. Humans have the right to use the natural environment and resources anyway they want.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

11. I volunteer my time for a nature conservation or environmental organisation/charity.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

12. I think it is important to take care of the natural world during my daily life for example by recycling or using public transport.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

13. I am concerned about how my actions and choices affect the environment.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

14. I give money to environmental charities and like to support nature financially.

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

15. I don't believe my behaviour and everyday lifestyle contribute to climate change

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

16. I would be prepared to pay more for environmentally-friendly products

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

17. Any changes I make to help the environment need to fit in with my lifestyle

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

18. I think the way I behave in the protected area is important to help protect nature e.g. taking trash home or keeping my dog on a lead

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

(Optional additional questions. Please answer in English if possible)

Please answer the following questions:

Do you feel there are barriers that stop you from spending time outside or enjoying nature?

What would encourage or enable you to volunteer or behave in an environmentally responsible manner?

Do you feel there are sufficient opportunities for you to enjoy and become involved in your local protected area?

Would you like to see anything change in your local protected area?

The reasons I visit my local protected area are:

Appendix 2: Child Questionnaire (English)

Gender

Boy Girl Other Prefer not to say

Age

Under 8 years old 8-11 years old 12-15 years old

Reason for visiting today?

Walking Climbing Mountain biking Horse riding Camping Site seeing

Wildlife watching Volunteering Adventure sports Dog walking Other

How did you get here?

On foot Bike Bus Train Car Other

1. At School we have lessons and trips outside in nature

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

2. When I feel sad, I like to go outside and enjoy nature

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

3. Being in the natural environment makes me feel peaceful

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

4. I feel sad when wild animals are hurt

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

5. I like to see wild animals living in a clean environment

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

6. Taking care of animals is important to me

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

7. Humans are part of the natural world

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

8. People cannot live without plants and animals

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

9. Being outdoors makes me happy

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

10. My actions will make the natural world different

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

11. I think it is important to recycle rubbish

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

12. I think it is important to take rubbish home when I am in a protected area

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

13. I think it is important to try to save energy and water at home e.g. turning lights off

1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

Anything else you would like to say...