

Restoring Nature in German National Parks: Policy and Case Studies

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Abstract

German national parks are faced with significant challenges to restore natural landscapes and show park visitors nature in its natural state. This paper summarizes several of the management issues and policy directions in German national parks. An overview of this relatively new park system is presented along with an introduction to the 'German' view of nature. Case studies using the Harz National Parks (Nationalpark Harz and Nationalpark HochHarz) located in north-central Germany and Nationalpark Berchtesgaden, located in southeast Germany are presented. These parks in very diverse landscapes offer a number of nature restoration challenges to managers. High visitation numbers, centuries of land-use, and highly modified landscapes all contribute to the difficulties in restoring natural structures and processes. We conclude that while German dedication to the national park ideal is admirable, national parks by themselves are not likely to restore nature in Germany.

German National Parks

There are presently 13 national parks in Germany, with two more in the planning stage (Figure 1). Established in 1970, the Bavarian Forest National Park is the oldest of the German parks. While national parks are recent, the concept of protection has existed in one form or another for over a century, with various designations, such as bird or game sanctuaries, being placed on valued parcels of land.

German national parks are administered at a local level by the state in which each park lies. While all aspire to the World Conservation Union (IUCN) definition of a national park (Category II), each is an independent entity with no central governing body.

Case Study 1: National Parks *Harz* and *HochHarz*

The Harz Mountains are a unique region in north-central Germany (Figure 2). A large dome of very old mountains juts up abruptly from a large flat plain. This area of Europe has been settled for centuries.

The first documented attempts to offer some form of protection to the area occurred in 1718. As the conquest of nature continued through the industry revolution, the last brown bear was hunted in 1725, and the last wolf in 1798. As industry and population continued to grow in the region, the last known lynx in the area was eradicated in 1818. Thus, the last natural predator in the area disappeared nearly 200 years ago. In 1800, the first tourist services were built on the summit of the Brocken (1142 m.). This began what would become one of the prime tourist draws to the region – hiking in the Harz Mountains.

Twenty years after the establishment of Yellowstone National Park in 1872, the first discussions of establishing a national park in the Harz Mountains were held in the local parliament. No action came from those discussions, but the seed for future plans was set.

Another attempt was made to create a protected area in the Harz in 1955. The military strongly resisted any talk of creating a conservation area in such a strategic location. It would be almost 40 years before a successful bid to create a protected area would come to be.



Figure 2. Harz National Park. (Source: <http://www.germany-tourism.de/e/6293.html>).

In 1990, in one of the last acts of the East German government, *Nationalpark HochHarz* (High Harz) was established. Located in the state of Sachsen-Anhalt, it covers an area of approximately 8900 ha. The park is centred around the Brocken and consists of elevations from 250 m to 1142 m above sea level. The national park is accessible from many locations along the highways in the area and from adjacent towns. An extensive trail network extends for hundreds of km through the park, with a road and railway servicing the top of the Brocken.

The landscape consists of mainly of Norway spruce (*Picea abies*) (a non-native variety planted for its quick growth and tall straight timber), aged 80 to 100 years. The lower levels of the park, below about 600 m, are mixed hardwood forest, dominated by beech (*Fagus*). Located between the rolling mountains are numerous raised bogs dating as old as 8,000 B.C. At about 1000 m, a natural tree-line exists and the environment becomes essentially alpine, with many small hardy plants, and stunted, windswept spruce.

Adjacent to *Nationalpark HochHarz* is *Nationalpark Harz*. Established in 1994 in Neidersachsen, it covers 15 800 ha of the Harz Mountains. Its environment is essentially the same as HochHarz but it contains more land at lower elevations (the highest peak is 937 m).

Combined, the two parks have an area of approximately 25 000 ha and comprise about 10% of the Harz Mountains. While their ecosystems and protection mandates are essentially the same, each park is located in a different state, and, until recently, were managed by two separate agencies. However, on August 28, 2004, the two Harz national parks were united, resulting in a larger national park and a single administration.

Visitation to the area (the parks and adjacent towns) is currently estimated to be about ten million persons per year, with the majority coming to the parks for day visits. As there are no gate houses, entry fees and the like, an exact count of annual visitation to the park is not possible. The majority of the visitors are German, and come from the northern regions.

Management Issues in Harz

The relatively small size of the new Harz National Park and the cultural history of the region provide numerous challenges to managers. One of the prime objectives is the restoration of the original and 'natural' forests. The original forest types have been replaced by a commercial timber species, and many of the natural inhabitants of the forests have long been hunted to extinction. These two issues, forests and wildlife, have been the main management focus in the parks. Managers anticipate that restoring a more natural system will require 500 years.

Wildlife

Two of the largest predators in the region have long been extinct, the European brown bear (*Ursus arctos arctos*) (1725) and the wolf (*Canis lupus lupus*) (1798). While managers recognize that there could be great ecological value in re-establishing a viable population of each, they also concede that the national park, and the Harz Mountains as a whole, are too small to support such populations.

There have been two moderately successful attempts at species re-introduction in the national park. The first was the capercaillie (*Tetrao urogallus*). This turkey-like bird once flourished in the Harz. Efforts were made to introduce mating pairs of the birds in various locations; however, due to the intensive use of many areas of the parks in all seasons, the habitat needs of the capercaillie could not be maintained. In 2003, the program was cancelled. While there may be a small natural population scattered in some more remote locations, managers concede that the effort has proven unsuccessful.

One major success, however, has been the reintroduction of the lynx (*Felix lynx*). This project began in 2000 with the introduction of three breeding pairs from Poland. The population is beginning to sustain itself, and there are now no less than 12 lynx active in the park, including three known to be born in the wild. Much work had to be done to gain the acquiescence of local people who live in and near the national park. During the first years, residents often mistook the lynx for large domestic cats and, in some cases, attempted to kill them. With a great deal of public relations and work within the local communities, lynx are now an accepted part of the park. People who once feared the new wildlife, now call the park offices to report sightings and pass along information on the animals. To aid in the success of this project, the lynx has become the symbol for *Nationalpark Harz*.

Forests

In the Harz National Park, the predominant forest is about 80 years old and composed mainly of Norway spruce. This mature monoculture is quickly approaching the end of its natural life and is beginning to die off. To compound this issue, the Harz Mountains lie in the direct path of the major air flow over central Europe, bringing with it the airborne industrial pollution of western Europe.

All of this has produced a great deal of acid rain in this wet environment. With the forests being old and mature, the rain has weakened them and made an ideal host for an invasion of bark beetles (*Ips typographus*). In some areas of the parks, this combination of factors has left a landscape that is comparable to what one might see after an intense forest fire. This natural cycle of the beetle has proven to be a large management issue. While park staff acknowledge that the beetle is a natural part of the forest, its impact goes far beyond the park border. Local politicians have complained that the neat, tall forests are no longer so. Dead trees and trees that are falling over are not as attractive to tourists.

The results of the bark beetle infestation are most noticeable in the Quitschenberg area. Here all trees have succumbed to the acid rain/bark beetle combination. To further aggravate things, the prevailing winds have blown over all the trees. The management approach here has been to leave it alone and to interpret the scene for the thousands of visitors who pass through the area on the *Goetheweg* (Goethe's Trail). Here, guides and signage point out that this, as ugly as it may seem, is nature at work. They point out that when the trees fall, they make room for new ones and a variety of other species. Clearly visible amongst the dead Norway spruce are healthy new trees, many of which are the native species for the area – the Harz spruce.

One of the goals of the restoration process is to allow the natural species to re-establish themselves where they once lived. In lower altitudes, patches are cut out to allow the natural hardwoods, beech and rowan (*Sorbus*), to take hold. Along pathways and streams hardwoods are planted and allowed an opportunity to take a foothold. While these species are natural in the area, they need special attention. The absence of natural predators in the Harz has created a large red deer (*Cervus elaphus*) population. Fresh hardwood bark is a tasty meal for these deer and almost all planted hardwoods have some sort of fence around them for protection from browsing.

Case Study 2: Nationalpark Berchtesgaden

Located in the southeast corner of Germany, *Nationalpark Berchtesgaden* is surrounded on three sides by Austria (Figure 3). There is a long history of human use of the region, dating to the second millennium BC.

By 1908, the Association for the Protection and Care of Alpine Plants had initiated the establishment of a protected area. Two years later, 8600 ha were



Figure 3. *Berchtesgaden National Park* (Source: <http://www.germany-tourism.de/e/6308.html>).

officially designated as the ‘Plant Protection Area’ of the Berchtesgaden Alps. This designation stopped the local trade in alpine plants, very popular at the time. It did not, however, stop the continuing trophy hunting, as the area was still used as royal hunting grounds. In 1921 the reserve was expanded to 20 400 ha and included protection for wildlife as well. With a few exceptions (notably the establishment of personal hunting areas by members of the Reich, during the Second World War), the new Königsee Nature Reserve remained in place until 1978.

In 1978, the Free State of Bavaria officially designated the area a National Park. Unlike many German national parks, Berchtesgaden consists completely of state-owned land. As

such, the government has broad control over the area and how it is used. At approximately 21 000 ha, the national park contains many lakes, moors, alpine meadows, mountains, and rock fields. Elevation ranges from 603 m (*der Königsee*) to 2713 m (*der Watzmann* – Germany’s second highest peak), providing for a range of habits including mixed hardwood forests, dense conifers, barren alpine regions and snow capped mountains. Protected area designations for the Austrian lands adjoining on three sides effectively double the total protected area. In 1991, the United Nations designated the area a UNESCO Biosphere Reserve.

This area has, for 2,000 years, been an important region for timber harvesting, cattle grazing and tourism. The town of Berchtesgaden in 2002 celebrated 900 years as a tourist destination. The proximity of the park to the national border and the long American presence in the region provide ample explanation for the 115,000 annual visitors, many of whom are international tourists.

Management Issues in Berchtesgaden National Park

Expanding Wild Land Areas

Managers in Berchtesgaden, while concerned about restoring a natural and self-sustaining ecosystem, have the luxury of being able to take a more protective approach. Being located in the front ranges of the Alps, the national park has been spared much of the extractive use found in the Harz Mountains. Management recognizes the park's unique situation and has developed a series of zones in an effort to protect existing wild lands and decrease the effects of conflicting land-uses.

Three zones have been identified in the national park. By far the largest is the *Kernzone* or 'core' zone. This is essentially the wild land zone in which nature is left to itself. Access is difficult, competing land-use is minimal, and management interference is slight. At present this zone comprises approximately 66% of the park.

Another zone in the parks is the *Pflegezone* – the 'care' zone. This is a zone with a high degree of human interaction and impact. Tourist facilities, such as visitor centres, tour boats, and restaurants are located within this zone. Also located here is much of the traditional cattle grazing and some limited timber operations. This zone allows easy access to the park for visitors and is the focus of almost all visits to the park. It presently occupies about 24% of the park.

The third zone is the *Temporäre Pflegezone* or 'temporary care' zone. Comprising only 10% of the park, this is a unique area that management recognizes as in need of tending in order to restore it. Management here is aimed at restoring it to a more natural state and then adding it to the *Kernzone* or core zone.

Managing Traditional Cattle Grazing

In Berchtesgaden, one of the most noticeable continued land-uses is the cattle grazing. For centuries, farmers grazed their cattle in the protected valleys of the Alps during the winter and then herded them into the alpine meadows for summer grazing. This historical right of the people to use the landscape for grazing purposes creates an obvious dilemma for managers: how to allow nature to re-establish itself, while allowing the people the access that is their right. In Berchtesgaden, pastures in the core and temporary care zones are be-

ing closed and allowed to regenerate. To compensate for this, new areas are being created in the care zone. Activities such as grazing will be concentrated in the lower, more developed reaches of the park, while allowing the protected core area to expand. In time, it is expected that this use will move out of the park altogether.

Wildlife

In addition to the management of the land-base and its users, there is active management of wildlife within the park. The absence of large predators has allowed for a blossoming population of deer in Berchtesgaden. The management of this herd is very obviously a contradiction to the effort to increase the extent of natural ecosystems within the national park. The maintenance of an artificially high game population in the 19th century has left a legacy that managers must deal with today. Recreational hunting is permitted in an effort to keep some control on the population. This right to hunt is also a result of the right to free access to public land and has been a traditional land-use within the park for centuries. While controlled hunting is not an unusual management response, what is surprising is a large feeding station in the care zone of the Klausbach Valley. The feeding station seems to contradict the natural population controls, but is meant to supplement the natural vegetation which is insufficient to support this high population. In order to keep the deer in the park, they must be fed. Such action may also serve as a means in assisting the re-establishment of the mixed forests as it may help ease the strain the deer put on it. It appears that a cull of the deer is out of the question.

Conclusions

The Director of Berchtesgaden National Park, Dr. Michael Vogel, points out that, while the goals of German national parks are essentially the same as for any in the world, Germany has a long way to go to meet those goals. He states that:

“In most of the 13 German National Parks there is presently a transition period due to the former land use in these areas. During this time the use of land and interventions in the natural processes will be either completely eliminated or greatly reduced.” (Vogel, pers. com., May 2003).

With centuries of land-use over most of the country, finding a natural area suitable for designation as a national park is difficult. Park managers recognize that their task is a monumental one – restoring nature to what it once was. Through research and historical documents, there is a reasonable indication of what was once present. The question remains, however, to what degree should nature be restored? Choosing a goal for restoring nature is not a scientific endeavour, but a social and, perhaps, a political one.

Within the parks studied, there seems to be a realistic approach: eliminate the known intruders (Norway spruce, cattle grazers, etc.) and ‘let nature be nature’. This approach is similar to North American approaches, in that both systems attempt to let natural processes happen as they will. In the case of German national parks, the attempt is to restore landscapes to states that are beyond the memories of people now living.

While the percentage of German land protected within national parks is similar to that of Canada, the size of the parks is significantly smaller. In addition to the small size, most parks are isolated from each other and in most cases from any other protected areas. This is particularly true in the Harz parks. They literally serve as a nature island. For the successful restoration of a natural environment, it will be necessary to establish more protected areas and develop some sort of corridor system through which wildlife can travel from one area to another. In the Harz parks, for example, there is not enough space for many species to find suitable habitat. By developing links among the national parks, other protected areas, and existing natural areas, perhaps some species would make a limited comeback.

The lack of a centralized national parks administration appears also to hinder the development and efforts of the national parks. As each park is managed, planned and developed by the state governments, there appears to be a lack of an overall common approach.

Management has surprisingly little control over the use of the parks. While managers attempt to influence use, they cannot control it. There are no gate houses to welcome visitors, or to collect user fees. As there are no fees, that potential income source cannot be used to attain the goals of the parks. Access to the parks is uncontrolled, and visitors can enter and exit from many locations. Rules for park use are posted at trail heads and on park brochures, but managers have little power to enforce them. The right of the people to free access to public land takes precedence.

The effort to establish and to operate German national parks has been challenging. For centuries, the Germans have been accustomed to a manicured form of nature. The idea of returning an area to a wild state has met with some resistance. However, over the past 30 years, this new system of parks has gained acceptance. German people seem to be accepting that there are things in nature that do not need to be tended.

Dr. Michael Vogel aptly sums up the reality facing German national park managers:

“For centuries our forefathers toiled and strained to transform ‘wilderness’ into cultivated land. To return even parts of nature back is undoubtedly considered somewhat hazardous and daring.” (Vogel, pers. com.)

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