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# **THE HISTORY OF PROTECTED FOREST AREAS IN EUROPE**

## ***FROM HOLY GROVES TO NATURA 2000 SITES –***

### ***Abstract***

The history of Protected Forest Areas in Europe reflects people's attitude towards forests throughout the centuries. All over the continent Protected Forest Areas have their origins in pre-Christian holy groves or spiritual places, in medieval hunting reserves for the nobility, in the early forest legislation of modern times and in the upcoming bourgeois nature conservation movements which opposed against industrialisation in the 19th and 20th century.

The history of Protected Forest Areas thus also demonstrates the religious and cultural importance of forests in Europe which has to be taken in consideration, apart from their economic and energetic key position. The article intends to give an overview of the development of Protected Forest Areas in Europe from ancient times until the 20th century, concentrating on Central Europe and giving examples from Germany. It is based on the joint research activities within the European COST Action E 27 "Protected forest areas in Europe - analysis and harmonisation (PROFOR)"<sup>1</sup> in which the authors participate as working group members from Germany.

## ***Protected Forest Areas in Europe Today***

The data about the entire forest cover and the percentage of protected forest areas in Europe vary substantially, due to differences in databases, definitions of *forests*<sup>2</sup> and the objectives for their protection. A further complication is the overlay of different protection areas. Thus, forests have been estimated to cover between approximately one third (FAO 1999) and 47% (MCPFE 2003b) of Europe's total land area.

When speaking about protection of forests, different objectives and intensities have to be taken into account. Forests can be protected just as a land use type, to defend them against other demands like cultivation or construction developments. They can be fostered with respect to their protective functions for roads, supply lines, buildings or settlements against natural hazards (avalanches, falling rocks) or to use their mitigating effects for annoyances like noise and negative visual impacts. They are safeguarded because of their ecological functions for natural resources like water, soil and fresh air or for their social and cultural benefits, like recreation. The main target however, which has been in focus for the conservation of European forests in the past two decades, is forest biodiversity, i.e. the diversity of genes and species in forests and

the diversity of forest ecosystems. But also here, various categories of different protected areas for different main intentions and different protection intensities are used throughout Europe, the same names for a category not necessarily representing the same purpose.

Hence, several initiatives have been started to harmonize the definitions and objectives of Protected Forest Areas in Europe, to collect comparable data and to present comprehensive information on the amount and status of Protected Forests in Europe.

The MCPFE (see last page) developed a European classification system of protected and protective forests and other wooded land. As described in the MCPFE Assessment Guidelines (MCPFE 2003c), three main categories of Protected Forest Areas (PFA) are distinguished as characterised in table 1:

Table 1
<p>MCPFE Classes:</p> <p>1: Main Management Objective Biodiversity                      1.1.: No Active Intervention                      1.2.: Minimum Intervention                      1.3.: Conservation Through Active Management</p> <p>2: Main Management Objective                      "Protection of Landscapes and Specific Natural Elements"</p> <p>3: Main Management Objective                      "Protective Functions"</p>
<p><i>Classification of Protected Forest Areas an other Wooded Land in Europa (MCPFE 2003 c)</i>                      Source: MCPFE</p>

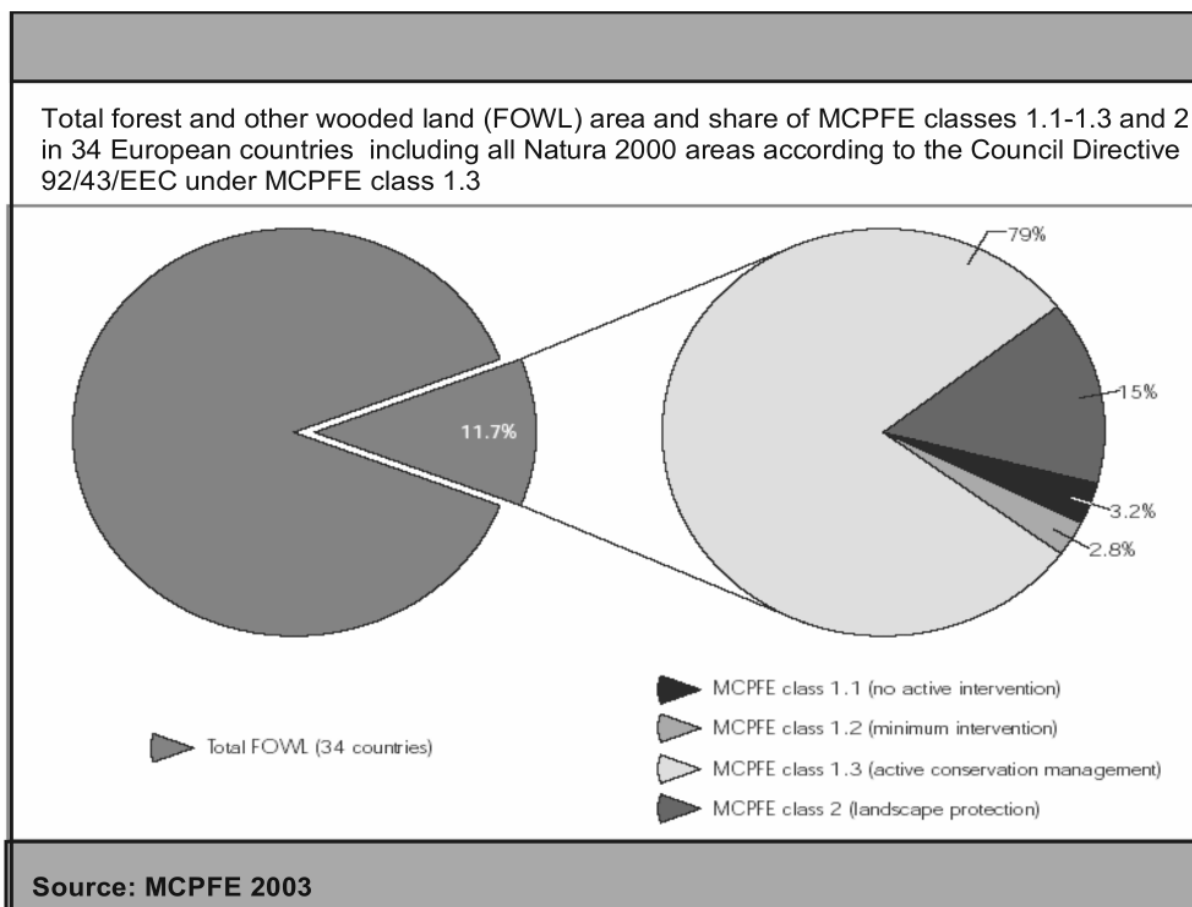
In order to be classified according to the MCPFE system, a PFA has to achieve the following principles: It must be designated

explicitly for the protection of biodiversity, landscapes and specific natural elements or protective functions, it must be established by decree or following a long term commitment (minimum 20 years) on a legal basis.

According to the respective data collection, PFAs amount to 127 million hectares which equals 11.7% of the total forest area (figure 1). Although the major part of these (85%) is designated to conserve forest biodiversity, only 6% remain without any or with a minimum of direct human intervention (MCPFE class 1.1 and 1.2). These are often primary forests and wilderness areas ore core zones of national parks in Eastern and Northern Europe. The countries with the highest proportion of protected areas with no active intervention in relation to their overall forest area are *Liechtenstein, Sweden, Georgia, the Slovak Republic* and *Bulgaria* (figure 2). The majority of the protected forest areas however are actively managed for biodiversity (MCPFE class 1.3).

In addition to protected forests conserving forest biological diversity, those dedicated to the protection of landscapes and specific natural elements have to be mentioned (MCPFE class 2). They comprise 15% of the protected forest areas and are mainly located in Central and Western European countries.

In *Austria, Belgium, the Czech* and the *Slovak Republics, Cyprus, Germany, Portugal* and the *United Kingdom*, more than 20% of the entire forests are designated for landscape protection.



**Figur1**

The Gap Analysis, compiled by the UNEP World Conservation Monitoring Centre with support from the World Wide Fund for Nature (Smith G. & Gillett H. 2000) was based on the international IUCN classification system (IUCN 1994). Likewise, the study was designed to provide relevant information on the distribution and conservation status of European temperate forests, in relation to the potential and current forest cover in order to identify major gaps in their protection and regional priorities for conservation action. 45 European countries were included in the study that covers the region between the Atlantic Ocean and the Ural Mountains, and extends

as far south as southern Greece and northwards to the Barents Sea.

According to this study 6, 3% of the remaining forests lie within protected areas (IUCN management categories I-IV.<sup>2</sup>). But only few relatively large sites (> 10,000 ha) account for 67% of these protected forests, while 95% comprise fragments of less than 1,000 ha. At

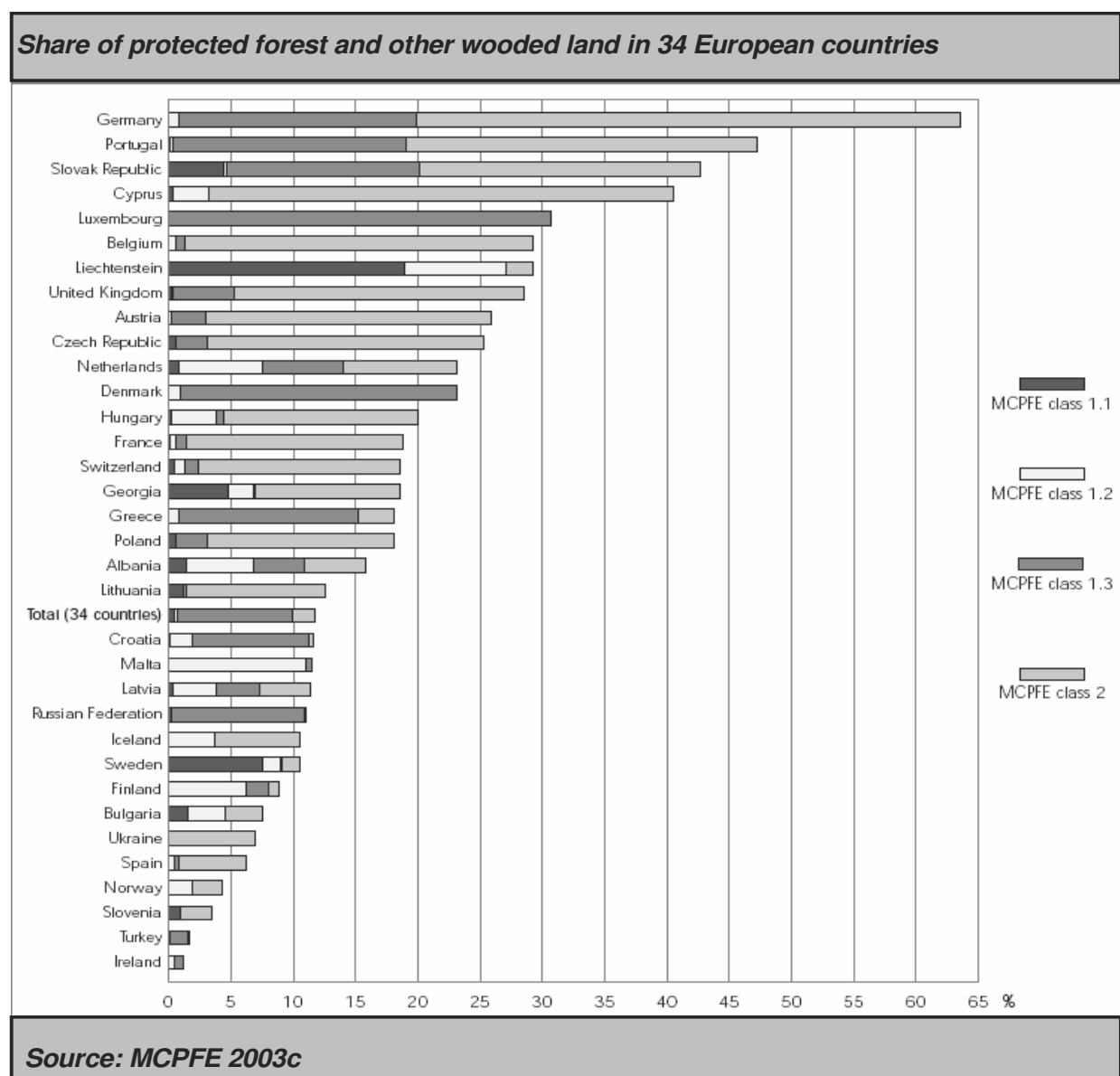
<sup>2</sup> Definitions of forest types vary between countries and international organisations. The FAO Forest Resource Assessment defines forests as having at least 10% crown cover per area unit (FAO, 1995). In contrast, CORINE land cover forest classes define forests as having 30% crown cover. Another question is, whether "other wooded land" like bushy sclerophyllous vegetation, including maquis and garrigue is encompassed (Smith G. & Gillett H. 2000) or not.'

Ia Strict Nature Reserve, Ib Wilderness Area, II National Park, III Natural Monument, IV Habitat/Species

a national level forest protection (as a proportion of current forest cover) ranges from 11.7% in *Belarus* to less than 1 % in relatively large countries such as *Bosnia Herzegovina* (0.8%), United Kingdom (0.6%) and *Belgium* (0.2%). COST Action E4 "Forest Reserves Research Network" was established in 1995 in order to promote research on "natural" forests with the objective to create a European

network of forest reserves, to collect ongoing research, to standardise research methodology and to create a central data bank for exchange of research results <http://www.efi.fi/DatabaseGateway/FRRN/news.html>. The main findings of COST E4 demonstrated again the need to clarify terminology and definitions for protected

Figure 2



forests and to acknowledge differences between countries with regard to the creation of a network of protected forests. The project also underlined the usefulness and need to create a representative network of strict forest reserves within each country, covering all forest types.

As a follow-up, COST Action E27 “Protected forest areas in Europe – analysis and harmonisation (PROFOR)”<sup>3</sup> was started in 2001 to further enhance the quality and clarity of information on PFAs at both the national and the European level. One specific goal of the action is to compile information on the historical background that has led to the today’s set of protected areas in different countries. The share of protected forest and other wooded land in 34 European countries shall be summarised as follows:

## ***The development of protected forest areas in Europe***

### **Spiritual Origins: Protection of Forests for Religious Reasons**

Tabooing not only specified trees but entire forests as dwelling places of gods, deities and

spirits is known from all over Europe’s pre-Christian cultures. From ancient Greece and ancient Rome to the Celtic and Germanic tribes, the Baltic and Finno-Ugric peoples as well as the Slavs, the holy or sacred grove was considered a place of spiritual presence, where felling, hunting and fishing was strictly prohibited. This kind of respectful preserving for religious reasons is certainly the primary, intuitive motivation for protection of forests. Until today, the term sanctuary is synonymous with protected area. In Bulgaria some holy groves, of which evidence can be dated back to 1100 B.C., remained preserved up to the 19th century.

The main sanctuaries of ancient Germanic tribes were sacred groves which – in contrary to the later Christian churches - were outdoor locations. The old High German word for temple – haruc - also means wood or sacred grove. Tacitus noted, *“Woods and groves are the sacred depositories; and the spot being consecrated to those pious uses; they gave to that sacred recess the name of the divinity that fills the place which is never profaned by the steps of man. The gloom fills every mind with awe, revered at a distance, and never seen but with the eye of contemplation”* (Tacitus 98 A.D., Germania).

### **A symbol of royal power: Protection of Forests for hunting interests**

While Europe settled down and recovered subsequent to the extensive phase of migration of its peoples between the third and

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<sup>3</sup> COST E 27 was established in 2002 and encompasses 24 member countries plus several international official observer organisations. It aims at harmonising the wide range of protected forest area categories used in European countries within the context of existing international systems of protected areas. To clarify the historical background which has led to the development of particular national PFA-networks is one of the specific tasks. For further information visit the project-homepage: <http://bfw.ac.at/020/profor>



the sixth century, the nobilities developed and established their power.

Usually, the royalties appropriated the uncultivated land, i.e. the forests, to regulate and control its use and cultivation and to gain earnings. As a consequence, the original meaning of the Middle Latin term *forestes*, as wild, *uncultivated land* or *pristine forest* metamorphosed to *authenticated sovereign-owned forest*.

Large areas were conceded as a fief to members of the nobility who thus became lords of the manors. Other parts however were entirely reserved for the sole royal hunting rights, where any use through common people, like felling, hunting, fishing or grazing, was strictly prohibited. Earliest evidence dates back to the 11th and 12th centuries A.D. Germany, Ireland, United Kingdom), but the practice is also known from Austria, Lithuania, the Netherlands and Sweden.

In large parts of the area of present-day Germany, the Frankish kings took possession of the wild forests which – until then – had been unrestrictedly available for everyone (Hasel 1985). With the intention to gain earnings through tributes, they regulated and controlled several activities, such as clearing, felling, collecting firewood or grazing. They also reserved large forest areas entirely for their sole hunting rights. In this way, the Frankish kings made these forests ‘closed forests’ (in German: *Bannwälder*; Grimm et al. 1878). Many of these early closed forests

remained sovereign-owned forests up to the 18th century (Hasel 1985) and persisted as extended forest areas with relatively low human impact until today (*Reichswald near Kleve, Königsforst near Köln, Kottenforst near Bonn, Schönbuch near Stuttgart, Spessart, Nürnberger Reichswald*) which often are of specific interest as protected forest areas.

Apart from these exceptions, the requisition of forest land through the sovereign did lead to massive deforestation and transformation into farmland. This development went along with Christianization of the pagan population. Many monasteries were founded and endowed with land under aristocratic management. They became influential and powerful centres of mission, culture and cultivation in former wilderness areas. To crusade however, did also mean to get rid of the former divinities and their close connection with nature. Thus, Christianization tended to demonise nature, especially forests. Forest became the antithesis to the bright, guarding and promising aura of Christianity: Dark, hostile, threatening, uncultivated and heathenish. The Latin word *silvescere* was used in the sense of wicked, peccant wildness. This changed; rather despising attitude of people towards nature even increases the importance of the royal hunting reserves for the preservation of forests. However, some ancient habits and customs have been assimilated; others survived even though blurring their original meaning. The medieval Gothic cathedrals for example have been considered as “*holy groves made of stone*”.

### **Restrictions of forest uses and early forest legislation: Protection of Forests as production resource**

The outright dependence of the people on forests as a donor of firewood, construction timber, fertilizer and animal food, as a place for multiple non timber uses and as the solely energy source caused further clearing and destruction of the remaining forests which finally lead to a marked shortage of timber at many places.

The state sovereigns often reacted by laying down ‘forest regulations’ to scotch further overuse. In many countries, customary rural law was written down between the 11th and the 16th centuries and state forest regulations were issued since the 15th century. Most of these regulations intended to secure the wood supply. The multiple ecological functions of forests in the cultural landscape however were yet rarely overlooked. However, some exceptions can be found in the alpine area, like protection forests in Austria (the *Bannwald von Fließ, Oberinntal, Tyrol*, protected in 1517: cutting of wood and litter harvesting was prohibited to avoid avalanches and gully erosion on the steep slopes above the village; the *Rannachschutzwald, Carinthia*, protected in 1518 to avoid avalanches impacting the villages *Krass, Griess* and *Rannach*; or the forest order for the whole of *Tyrol*, which banned forest utilization in specific forest areas to avoid avalanches) or Switzerland (the *Andermatt* “banning letter” from 1397, which prohibited any utilisation of wood or litter to secure protection from avalanches, rockfalls

and torrents (Commarmot et al. in print, Frank et al. in print).

Also in Germany where no central royalism had arisen, the many small state sovereigns used their power to protect the forests by laying down *Forstordnungen* (forest regulations) for their entire territories. These forest regulations often prohibited further clearings or required reforestation, they regulated grazing and the collection of firewood and they were the predecessors of the later state forest laws, which were passed in the course of the 19th century (Hasel 1985).

In parallel, regular forest management was developed in practice. First evidence for a precautionous and planned forest management is known from the cities *Erfurt* (division of the forest into plots for recurrent forest use in the 14th century), *Nürnberg* (reforestation activities in 1368) or *Reichenhall* (around 1500).

### **The Enlightenment and early landscape architecture: Design and preservation of the entire landscape for aesthetic and humanistic reasons**

The *Age of Enlightenment* during the 17th century pioneered the Modern Age. In many countries, it finally disestablished the Church and deprived the aristocracies of their power, thus bringing release from oppression and bullying to the commons and generating the *new citizen*. Rationalism, Economics, Natural Sciences and technical development arose and should forward industrialisation soon. The ideals of the Enlightenment did not only

change society and policy but also men's conception of nature and landscape.

In this regard, the new approach towards society and environment can be identified in early landscape architecture, namely in the landscape garden, a concept which originated in England in the middle of the 18th century and which determined the European garden and park design for more than one century. Particularly picturesque and harmonious landscape sceneries as to be found in the cultural landscapes of that time were staged as an idealized image of "nature" for pleasure and enjoyment. What began as a "landscape painting to stroll in" was developed further by enlightened aristocrats, particularly in *Bavaria* and *Prussia*, into a movement of *early landscape architecture*. The whole cultural landscape was to beautify and to improve to increase peoples living conditions as a basis for their mental and cultural state.

Both, landscape gardens and the early movement of landscape architecture did include forests, even though not necessarily very natural ones. Their main interest, however, was focused on the design and management of the ideal cultural landscape as a whole. Therefore, the movement did not forward the protection of forests as such (nonetheless, the very first Protected Forest Area was established in 1718, namely the virgin forest of the *Brocken* in the Harz Mountains; Succow 2002).

What was further still missing was the idea of protection and conservation of species and their habitats. Industrialisation was mostly still

in an early stage and the threats it should impose on the natural environment were not yet foreseen. The later understanding of *Nature Conservation as a preservation of Biodiversity* was far not developed.

At the turn of the 18th to the 19th century however, *Romanticism* developed as a reaction against the commandments of rational logic and objectivity of the Enlightenment. It emphasized the individualism, subjectiveness, emotionality and imagination of the human being. Its moving power and almost an end in itself was the craving for a dream world beyond the trivial daily experiences (see <http://de.wikipedia.org/wiki/Romantik>). „Naturalness" became one important ideal of *Romanticism* (Zielonkowski 1989) that changed again peoples view on nature (Brockhaus 1998). The *Biedermeier* can be understood as an expression of middle class citizens ("petit bourgeois") at that period of time who had a more realistic and practical mind. Being confronted with progressing industrialisation and urbanisation, they searched for a simple, honest, harmonic and secure life. For them, nature was not an idealized, dreamful imagination but a treasure and a creation of God.

(See <http://de.wikipedia.org/wiki/Biedermeier>).

### **Ongoing industrialisation as a trigger of the Nature Conservation Movement:**

#### **Designation of the first Protected Areas as Nature Reserves**

In the second half of the 19th century the enthusiasm for the rapidly progressing

industrialization superseded the romantic ideas and also the concept of early landscape architecture fell into desuetude. Countless peasant farmers and labourers became industrial workers and migrated to the growing industrial and urban zones. The discovery of mineral plant nutrients and fertilization increased the agrarian production substantially and eventually allowed the separation between agriculture and forestry.

In Germany, large unproductive or devastated areas were systematically afforested with conifers. The opening of fossil energy resources finally minimized the need for firewood, bringing further relief to the growth and the regeneration of the forests. Regular forest management became the customary practice.

As the traditional cultural landscape changed its face and as familiar natural structures and characteristics disappeared, this development meet with the first organized opposition of attentive citizens. They committed themselves privately or in associations for the preservation and the improvement of certain parts of the local landscape which were endangered by building projects or plot realignments (Stiftung Naturschutzgeschichte 2002).

Through their initiative, the first natural monuments were protected and implemented by official orders or purchased by local, regional or State governments. However, no formal protection categories existed at that time. Examples in Germany are the Dragon's Rock (*Drachenfels*) at the *Rhine River*,

*Prussia*, (protected since 1836; Schoenichen 1937a) or the *Devil's Wall* (*Teufelsmauer*) north of the Harz Mountains, Anhalt (protected since 1852; Röper 2002), which are both of geological importance. The first officially Protected Forest Areas of these times in Germany are the beech forests *Theresienhain* near Bamberg, Bavaria, (1803; Kölbel 2002) and the *Holy Halls* in Mecklenburg (protected since 1850; Succow 2002).

The home and nature conservation movement dawned and it was Wilhelm Heinrich Riehl (1823 - 1897) who intellectually paved the way for it in Germany. In his work "*Natural History of the German People*" (*Naturgeschichte des deutschen Volkes*", 1851), he wrote: *„For centuries, it was a question of progress to assert the right of the farmland, now it is also a question of progress to assert the right of wilderness. Not only the forest, also dunes, fens, heath, rocks and glaciers, all wilderness and wasteland, is an essential complement to the cultural land. We should be pleased that such wilderness still exists in Germany“* (*„Jahrhundertlang war es eine Sache des Fortschritts, das Recht des Feldes eindeutig zu vertreten, jetzt ist es auch eine Sache des Fortschritts, das Recht der Wildnis zu vertreten. Nicht bloß das Waldland, auch die Sanddünen, Moore, Heiden, die Felsen und Gletscherstriche, alle Wildnis und Wüstenei ist eine notwendige Ergänzung zu dem kultivierten Feldland. Freuen wir uns, dass es noch so manche Wildnis in Deutschland gibt“*). Riehl already demanded to preserve the natural and semi-natural remainders of the

pre-industrial cultural landscape, including forests.

The most important representative of the early Nature Conservation Movement in Germany however was the musician *Ernst Rudorff* (1840-1916), who coined the German term for nature conservation (*Naturschutz*) in 1888 (Zielonkowski 1989) and who developed an entire programme for protection and nature sound landscape management. In 1904, Rudorff founded the “*German Alliance for Nature Conservation*” (*Deutscher Bund für Heimatschutz*). Its primary task was “to protect the specific natural and historical character of the German home”. Rudorff followed a holistic concept of the landscape as home, where the safeguard of nature, in particular of the indigenous plant and animal species was one, nonetheless primary goal, beside others.

The same motivations of defensive preservation of the pre-industrial landscape can be recognized with respect to the efforts to establish the first large Nature Reserve in Germany, the *Naturschutzpark Lüneburger Heide*. In 1909 the Nature Conservation Park Society (*Verein Naturschutzpark*) was founded as a private initiative “to protect original and impressive landscapes and their natural communities of plants and animals against civilization”. Considerable financial resources were collected to buy land in such areas. In 1921, the Prussian State added further land and declared the whole area as Nature Conservation Area. Again, the main interest of protection was not focused on forests but on the entire cultural landscape as a heritage.

The heath was to be protected against afforestation, conversion into farmland and constructions.

Nevertheless, the first *strict forest reserve* was established in Württemberg in 1911 (Bücking 1995). Early efforts to create an entire German framework of natural forest reserves arose in the 1930’s. They are connected with the names Hesmer and Hueck. In 1934, Hesmer demanded to set up a network of ‘natural forest cells’, in which any use should be prohibited (Hesmer 1934).

The first German nature protection law, which was in force for the whole of the country, the *Reich Nature Protection Act* (*Reichsnaturschutzgesetz*), was promulgated in 1935. This act named three spatial protection categories, namely ‘*natural monument*’, ‘*nature protection area*’ and ‘*Reich nature protection area*’. In 1937, Walther Schoenichen, head of the *Reich Office for Nature Protection* from 1922 to 1938, named 207 existing ‘forest nature protection areas’ in Germany (Schoenichen 1937b). In Bavaria and in Baden, laws to regulate the conservation of natural monuments were already passed in 1908 and in 1912 (Wolf 1920). The biggest territorial German state Prussia amended its Field- and Forest-Policy Law of 1880 in 1920, herewith creating the first legal basis for designating nature protection areas by ordinance (Klose & Vollbach 1936). It was immediately used to designate the Nature Conservation Area *Lüneburger Heide*.

Before, Hugo Conventz’ memorandum “The Endangerment of the Natural Monuments and

Suggestions for their Conservation” (Conwentz 1904) had prepared the ground for the foundation of the first office for nature conservation in Germany. Only two years after publication of this study about endangered natural habitats, the State Office for Natural Monument Management (*Staatliche Stelle für Naturdenkmalpflege*) was founded with seat in Danzig, Prussia. Supported by provincial, regional, county and local committees its task was to find, examine and conserve natural monuments and Hugo Conwentz (1855-1922) was appointed as the head of the institution (Stiftung Naturschutzgeschichte 2002). The year of 1906 thus can be regarded as the year of birth of the state Nature Conservation in Germany. It was finally established in 1919 through article 150 of the German Constitution (*Reichsverfassung*) which stated that the *monuments of art, history and nature are safeguarded and treasured by the state* („*Die Denkmäler der Kunst, der Geschichte und der Natur genießen den Schutz und die Pflege des Staates*“)

Similar developments must have arisen in many other countries, since a considerable number of state nature conservation authorities were established at the beginning of the 20th century, followed by the designation of Protected Area Categories and the passing of the first nature conservation laws in the first half of the 20th century. In the vanguard were The Netherlands (1908), Sweden (1909) and Norway (1910). Other countries like Bulgaria, Finland, France, Greece and Spain followed soon. In some

cases, however, this process only took place after World War II (i.e.: Belgium, Italy, and United Kingdom).

### **State Nature Conservation after the Second World War: From the protection of forests as scattered reserves towards an all over Europe habitat network**

In the first years of reconstruction after Second World War, little attention was paid to the landscape and the natural environment. But due to the rapid economic development, environmental problems should increase soon and the losses of special landscape characters and their species richness should become obvious. Slowly but continuously, people awareness for their natural environment increased, awakened and promoted by alarming publications like Rachel Carson’s “Silent Spring” in 1965 or Daniel Meadows report “Our Common Future” in 1973 as well as by the first European Nature Protection Year in 1970.

The forest scientists of the German Democratic Republic were the first who rediscovered nature conservation goals for forests in Germany and who translated the idea of strict forest reserves into action again (Bücking 2000). The *Institute for Landscape Science and Nature Protection, Halle*, set up a network of ‘stocked total reserves’ (Knapp & Jeschke 1991). In Western Germany, however, the idea only regained support around the European Nature Protection Year in 1970. Since then, many of the natural forest reserves, which had different names in the

different German states (*Bundesländer*), were created by the forest administrations within the state-owned forests (Bücking 2000).

In the seventies, the responsible authorities for Nature Conservation in the different German federal states started programmes for registration and assessment of all valuable and endangered natural habitats. In tandem with the publication of *Red Data Books*, and supported by the new Federal Nature Conservation Law (*Bundesnaturschutzgesetz*) of 1976, these state wide habitat inventories (*landesweite Biotopkartierungen*) served as a knowledgeable basis for comprehensive designations of Protected Areas. Since then, the number and percentage of different protected areas in Germany increased significantly.

There are various different categories of protected areas provided by the Nature Conservation Legislation for different specific objectives for conservation. The percentage of forests in these protected areas, however, is very difficult to calculate due to inhomogeneous data bases, definitions and responsibilities in the different federal German states as well as the overlay of different protection categories (Welzholz & Bürger-Arndt in print.). Hence, the total amount of Protected Forest Areas in Germany is not known in detail. The latest results of the inquiries by the *Federal Ministry of Consumer Protection, Food and Agriculture* that (BMVEL 2001) names an amount of 0.77% of unmanaged forests, 5.0% of stringent protection categories and 4.5% legally

protected biotopes in comparison with the total forest area, which equals 0.2%, 1.6% and 1.3% of the total German land area.

Beyond these specific protected areas that correspond to the *Federal Nature Protection Act*, the entire German forest is in principal protected by the legal requirements of the Federal Forest Act of 1975 and the Länder forest laws (Möller 2000). For example, conversion of the forest land to other land uses requires the permission of the ‘Wald authority’ (BMELF 1999). This general protection can be understood as a kind of minimum protection. Since almost 20 years, it has been broadened by demands, discussions, definitions and regulations of and for nature-related forestry (*Naturnahe Waldwirtschaft*) which should ensure a minimum standard for integrated nature conservation goals, also in managed forests.

This development reflects a general change in the officially recognized and declared conception for Nature Conservation and in the understanding of its requirements not only in Germany. More and more it was acknowledged what conservationists had dunned since many years: That even thousands of small, scattered nature reserves would always be insufficient to save the survival of the wildlife species. They would be lost under the influence of the surrounding intensively used cultural landscape like tiny islands in the surging billows of the ocean. Mitigation would be possible by accomplishing a respectable set of adequately large protected areas as optimum refuges and by

connecting these reserves via semi-natural landscape areas and structures which could serve as trails for migration. Additionally, a nature and environment friendly land use management which respects the essential demands for the preservation of the natural environment would be indispensable. In accordance with this, an entire concept for nature conservation with staggered intensities of protection and land use was developed (Bundesforschungsanstalt für Naturschutz und Landschaftsökologie 1989, Erz 1978, Haber 1971).

Analogical ideas and initiatives can be recognized all over Europe. As one of the most important modules, the Natura 2000 network of the EU which is based on the Council Directive 92/43/EEC on the conservation of natural habitats and wild fauna and flora (Habitat Directive) has to be mentioned. It aims at creating an all over Europe network of areas with protection status ("Sites of Community Importance") in accordance with the "Birds"<sup>10</sup> and the "Habitats"<sup>11</sup> Directives. Concerning forests, the Ministerial Conference on the Protection of Forests - MCPFE was launched In 1990, as a high level political initiative for continuing cooperation between 40 European countries an the European Community in the field of protection and sustainable management of European forests. Since 1990, four Ministerial Conferences on the Protection of Forests in Europe have taken place, each followed by several Expert Meetings.

The signatory states and the European Community are responsible for implementing the MCPFE decisions at regional, national and sub-national levels. Based on voluntary commitments, which constitute a common framework, governments all over Europe have taken initiatives to ensure and improve the sustainable management and protection of their forests (see <http://www.mcpfe.org>).

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