

Green Belt Europe: Borders Separate, Nature Unites

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Abstract—During the period of the Cold War between 1945 and 1989, a “Green Belt” of valuable pristine landscapes developed along the border line between Eastern and Western Europe, the intensively fortified and guarded so called Iron Curtain. Due to the remoteness of the border areas, a high number of national parks and other large conservation areas can be found there. They are connected by small conservation areas and linear structures along the borders which are to a high percentage natural, semi-natural and/or extensively used areas. The Green Belt is a cross section of all European biogeographical regions and a model for European Green Infrastructure (European Commission 2013) which should be further developed as such. Moreover the Green Belt is an outstanding memorial landscape of European relevancy with a great potential for trans-boundary cooperation, sustainable regional development, the support of understanding among nations and the merging of Europe. Communication and lobbying is essential for preserving the wilderness values of the Green Belt. The common historical and cultural heritage of the Green Belt is an important argument for its protection apart from the conservation aspect. The Green Belt initiative is a geopolitical challenge and change; it connects 24 European countries and stakeholders from governmental and non-governmental organizations from the local to the international level.

Introduction—From Death Zone to Life Line

‘Nature knows no boundaries’ is an often stated truism, but absolutely pertinent in Europe with its densely packed political borders which frequently follow natural features such as mountain ranges or river systems. Regarding the European Green Belt, nature does not only know no boundaries, it even unites across borders: people, organizations and states, large pristine areas through the continent, animal and plant populations as well as Europe’s history and future.

In the 20th century, European landscape was changed dramatically by human impact. The growth of the European population, the industrial agriculture and fast construction of traffic infrastructure led to the destruction and fragmentation of natural and semi-natural habitats. Wilderness was pushed to the margins and remote areas of the continent. But between the end of World War II and the collapse of the Eastern bloc in 1989, a North-South-corridor throughout Europe escaped this impact: the border zone along the so called Iron Curtain between the politically separated eastern and western part of Europe. Along the Iron Curtain a “Green Belt” of valuable pristine landscapes developed. Due to the remoteness of the border areas, a high number of national parks and other large conservation areas can be found there. An outstanding ecological network and living memorial landscape developed. Despite its brutal inhumanity, the Iron Curtain granted nature a pause for breath along over 12,500 kilometers from the Barents Sea at the Russian-Norwegian border, along the Baltic Coast, through Central Europe and the Balkans to the Black Sea (see figure 1). Due to the politically special status of former Yugoslavia and Albania, the Iron Curtain did not only separate the East from the West but also surrounded these two countries.



Figure 1—The Green Belt Europe connects 24 European countries. Copyright: BUND-Project Office Green Belt

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A lack of conventional land use and agriculture as well as the absence of most human-made disturbances along large parts of the Iron Curtain and also in its surroundings led to the conservation and development of large wild nature areas (see figure 2) and a connected system of various nature related habitats and landscapes. Riecken et al. (2006) point out that in the former Eastern Bloc countries the utilization of border land was mostly prohibited, in some areas villages at the border were raised to the ground and people were forcibly resettled in the inland, whereas on the western side remote border areas were less attractive for investors, sparsely populated and no major infrastructure was needed.

Background of the Initiative

Unwittingly the Iron Curtain supported the conservation and development of valuable habitats and therefore served as a retreat for many endangered species. The richness of nature related habitats became obvious long before its fall. Years before the breakdown of the Iron Curtain, conservationists in several areas of Europe focused on the flourishing nature. Therefore the establishing of the European Green Belt initiative was more or less a merging of different existing regional initiatives into a European one.

In the year 2002 BUND (Friends of the Earth Germany) suggested the creation of a Green Belt all along the former Iron Curtain for the first time. It succeeded in bringing together the different approaches by implementing first conferences on the European Green Belt supported and organized by the German Federal Agency for Nature Conservation (BfN) and the World Conservation Union (IUCN) in 2003 and 2004. The three main origins of the European Green Belt initiative are - from north to south - the activities along the Fennoscandian Green Belt, the German Green Belt and along the Green Belt in the Balkans.

Fennoscandian Green Belt

Already in 1970 satellite pictures showed a dark green belt of old-growth forest on the Finnish-Russian border. Nature conservation cooperation between Finland and the Soviet Union started in the 1970s when a scientific-technical cooperation agreement was signed (Haapala et al. 2003). Furthermore a joint Finnish-Russian working group on nature conservation was founded, which led to the successive establishment of a series of twin parks along the border in the mid-1980s. An inventory project on border forests conducted between 1992 and 1994 showed the ecological value of this border area with regards to ecosystems and species in the boreal forest zone and led to the idea of establishing a network of separate protected areas on each side of the border. In this connection it was firstly discussed to develop a Fennoscandian Green Belt covering also the border of Norway and Russia. Core of this Fennoscandian Green Belt are the numerous and large nature reserves along the border (see figure 3). The concept of the Fennoscandian Green Belt includes also a joint environment policy in the border area (Hokkanen 2004).

The Fennoscandian Green Belt is a mosaic of forests, bogs and lakes; it covers a wide range of ecosystems from the Arctic tundra on the Barents Sea coast to mixed broad-leaf forests covering the islands in the Gulf of Finland. The largest part is northern coniferous forest, known as the boreal zone. The area comprises also the last tracts of old-growth taiga in the European part of the continent and highly interesting geological structures and relief as part of the ancient Baltic crystalline shield. Karivalo and Butorin (2006) show that the Fennoscandian Green Belt contains the last large massifs of old-growth taiga typical for Fennoscandia, which mainly consist of dry pine forests.



Figure 2—A great number of pristine and nature related landscapes like the Thaya valley (trans-boundary national park Czech Republic, Austria) are part of the Green Belt Europe. Picture: Christian Übl.



Figure 3—Existing and planned nature reserves along the Fennoscandian Green Belt. Map from Hokkanen, 2004.

Because of the large pristine areas and forests, the Green Belt of Fennoscandia serves as a retreat for several large and endangered carnivores like the Wolverine (*Gulo gulo*), the Eurasian Lynx (*Lynx lynx*), Wolf (*Canis lupus*) and Brown Bear (*Ursus arctos*). Large carnivores are an indicator group of animals which has been carefully studied for decades and shows the high value of the Fennoscandian Green Belt.

Central European Green Belt and Green Belt Germany

The Central European Green Belt crosses a variety of cultural landscapes, some of which are intensively used by agriculture. It passes the Bohemian massif with its well-wooded transboundary national parks such as the Bavarian Forest/Šumava, and follows the courses of near-natural rivers such as in the floodplains of the Mura and Drava. After passing through the long mountain ridge of the Karavanke Mountains and the Julian Alps, the Green Belt ends on the Adriatic Sea coast. In the intensively used cultural landscape of Central Europe, the Green Belt is a last retreat and structural element for many endangered species. It forms a bridging element between grassland fallow and wetlands, between dry grassland and stands of mature woodland. The German part of the Central European Green Belt is a special case because it divided one country rather than separating countries from each other. German governmental and non-governmental organizations have been very active for its preservation and have been gathering comprehensive scientific data for more than 30 years. Therefore a special focus is put on the German Green Belt in this chapter.

The border fortifications of the Iron Curtain were most strongly expressed in the formerly divided Germany. The GDR (German Democratic Republic) used 3,000 kilometers of fences, 200 kilometers of walls, 800 kilometers of anti-vehicle ditches, 1,800 kilometers of patrol routes 850 watchtowers, 1.2 million tons of concrete and 700,000 tons of iron, land mines and spring guns to “secure” their border against West-Germany.

First observations of the border areas, only possible from the western site, from 1975 on and a systematic ornithological survey in 1979 on a stretch of 140 kilometers along the inner-German border conducted by young conservationists of Bund Naturschutz (BN), the Bavarian branch of BUND, showed the great richness of biodiversity. The ornithological survey covered the immediate border zone to Thuringia (GDR) and large areas of adjacent farmlands in Bavaria for comparison (Meyer et al. 2011). Beck and Frobel (1981) found that 90% of the recorded, highly endangered bird species like Whinchat (*Saxicola rubetra*, see figure 4), Red-Backed Shrike (*Lanius collurio*), European Nightjar (*Caprimulgus europaeus*) and Woodlark (*Lullula arborea*) preferred to breed inside the border strip. Since then, it was clear, that the inhuman border line had developed into a last retreat for species avoiding intensively used agrarian areas. Further activities followed, e.g. first land purchases at the western side of the border by BN and attempts to get in contact with conservationists from the eastern side (Frobel et al. 2009).

The Iron Curtain fell in 1989. One month after the Berlin Wall was officially opened; BUND organized the first meeting of nature conservationists from East and West Germany. The approximately 400 participants passed a resolution that requested priority protection as a “Green Belt” – an ecological backbone of Central Europe – for the border strip between the Federal Republic of Germany (FRG) and the German Democratic Republic (GDR). Thus, the Green Belt Germany-project was born. Right from the start, it was not only Germany’s first nationwide nature conservation project but also a living memorial to recent German history. The first years of the Green Belt in Germany were marked by



Figure 4—In intensively used agricultural areas like Germany, the Green Belt is irreplaceable as ecological network and often last retreat for endangered species like the Whinchat (*Saxicola rubetra*). Picture: BN-Archive

a positive interest by the media, environment politicians, who took up the idea, and committed nature conservation authorities in the new states (the former GDR-countries), who designated nature reserves along the former Iron Curtain. But these times were also characterized by rapid intervention and destruction of valuable areas. E. g. habitats that had been unused for decades were ploughed up in a few days mostly by Western farmers.

It was not until 2001, that a habitat survey of the entire former inner-German border line carried out by the German Federal Agency for Nature Conservation (BfN) together with BUND (Schlumprecht et al. 2002) brought a decisive breakthrough. The results proved the Green Belt to be of high value for German nature conservation. The survey identified 109 different habitat types along the 1,393 kilometers long and 17,656 hectares large central Green Belt Germany between the former borderline of FRG and GDR and the road for military vehicles. 60% of the Green Belt Germany consisted of streams, rivers and inland waters, various types of forest, extensively used mesophilic grassland, unused fallow land and species-rich moist and wet grasslands. Half of the area consisted of endangered habitat types of the Red List for Germany, e.g. xerophilic grassland, moors and wetlands, semi-natural riparian zones and alluvial forests. At the same time, 85 % of the area and 80 % of the length were regarded as intact (Schlumprecht et al. 2002). Currently a follow-up habitat survey concentrating on the open landscape habitats is being conducted. First results show that intensification of agriculture and natural succession are still a major threat for many of the valuable habitats and species. However the gap area, i.e. area where the Green Belt is considered destroyed has been reduced from 15 to 13 % compared to the first survey. It is not clear in how far this reduction is a result of methodological differences of the two surveys. A project funded by the Federal Agency for Nature Protection

with funding by the “Bundesprogramm Biologische Vielfalt” concentrates on closing the gaps in three model regions by restoring the habitat corridors as shown in the example in figure 5.

Even if a systematical survey on the species level so far could not be conducted for the whole area of the Green Belt, the gathered data from several local and regional surveys and observations shows that 1,200 species listed in the nationwide or regional Red Lists of Germany occur in the Green Belt. Amongst these are *Polysarcus denticauda*, Sand Lizard (*Lacerta agilis*), Natterjack Toad (*Epidalea calamita*, formerly *Bufo calamita*), Tree Grayling (*Hipparchia sttilinus*), *Eresus cinnaberinus*, *Arnica montana* and the European Otter (*Lutra lutra*).

The Green Belt Germany is a backbone of a nationwide ecological network. There are 150 nature conservation areas along the Green Belt, most created after 1989, and further 125 conservation areas in the vicinity. According to Geidezis and Kreutz (2009), the ecological network area is multiplied by 12.5 (=2,232 square kilometers) if the 150 conservation areas directly adjacent to the Green Belt are included. In the long run, the aim is to protect and develop not only the partly narrow central German Green Belt as ‘backbone’ of the ecological network but also adjacent conservation and nature-related areas as ‘ribs’ on both sides.

Balkan Green Belt

In South-Eastern Europe the Iron Curtain separated several countries, not just the two political blocs. Yugoslavia was not part of the Eastern Bloc and people were allowed to travel. The border between former Yugoslavia and Greece was heavily controlled and only a few border crossings were open. Albania closed its borders and was isolated from the rest of Europe since the early 1970s. This special situation led to the fact, that on the Balkan Peninsula the Green Belt follows not only the borders of the Eastern Bloc, but also those of Albania and former Yugoslavia forming a “Y” from the Danube to the Mediterranean and the Black Sea. As in other parts of the Green Belt these borders largely preserved nature from destruction by human activities (Schneider-Jacoby et al. 2006). After the collapse of communism also on the Balkan Peninsula, the European Nature Heritage Fund (EuroNatur) began building support among governmental and non-governmental organizations in the early 1990s, with the aim of protecting transboundary areas of high ecological value.

From the Pannonian Plain to the Mediterranean and Black Sea coast, the Balkan Green Belt forms an extremely heterogeneous, but mostly natural corridor. Alluvial wetlands, steppe areas, mountains, lakes and nature related cultural landscapes form a unique mosaic of valuable habitats. Along the Balkan Green Belt different valuable habitats are connected. For example, mountain national parks are linked with the protected Lakes Prespa and Ohrid in the border zone of Albania, FYR Macedonia and Greece (Vasiljević and Pezold 2011). On the coast, marine habitats such as beaches and lagoons are interrelated with the freshwater ecosystem of Lake Skadar (Montenegro, Albania) or the alluvial wetlands of the Evros-Meric River (Greece, Bulgaria, Turkey). Although many wetlands are situated at the border, the biggest part of the Balkan Green Belt is formed by mountain chain and



Figure 5—Green Belt between Thuringia and Hesse near the village Obersuhl (left). Picture: Klaus Leidorf

forest complexes. No large towns or industrial zones are located along the formerly strictly controlled border. The range offers excellent opportunities for the establishment of large-scale protected areas.

The Balkan Green Belt is part of an extensive connected habitat system and forms an important ecological corridor. It is a retreat for numerous rare species like Dalmatian Pelican (*Pelecanus crispus*), Imperial Eagle (*Aquila heliaca*) and Balkan Lynx (*Lynx lynx balcanicus*) (Schwaderer et al. 2009).

Trans-Boundary Network and Cooperation

During the international conference “Perspectives of the Green Belt” in Bonn (Germany) conducted by the German Federal Agency for Nature Conservation (BfN) in July 2003, the vision of a Green Belt through Europe was officially discussed for the first time. A very big step for the Green Belt Europe was the international conference in Hungary in September 2004. The World Conservation Union (IUCN) and BfN jointly organized a conference that took place in the trans-boundary protected area of the Fertő-Hanság National Park in Hungary. Over 70 participants from 17 countries attended. The two main outcomes of this conference were a common structure for the coordination of the Initiative and a Programme of Work.

Today a huge number of associations, groups and authorities in 24 countries are working within the European Green Belt initiative. Currently there are four distinct areas

of activity: The Fennoscandian Green Belt, with Norway, Finland and the Russian Federation. The Baltic Green Belt with Estonia, Latvia, Lithuania, Poland and the German coastline of the Baltic Sea. The Central European Green Belt in Germany, the Czech Republic, Austria, Slovakia, Hungary, Slovenia, Croatia and Italy. The Balkan Green Belt; running along the barrier that separated the Balkan countries—Serbia, Montenegro, Kosovo, FYR Macedonia, Romania, Bulgaria, Albania, Greece, Turkey -, ending at the Black Sea. The four main regions are attended by Regional Coordinators: The Association of Zapovedniks and National Parks in Northwest Russia for Fennoscandia, BUND for the Baltic and Central Europe and EuroNatur for the Balkan region. IUCN took over the patronage of the initiative. Furthermore, in every country so called National Focal Points, mainly from ministries, are persons in charge.

The European Green Belt connects 16 EU-countries, four candidate countries, two potential candidates and two non EU countries with Russia and Norway. The initiative is an extraordinary chance of geopolitical, ecopolitical and cultural relevancy for the EU. The initiative offers outstanding possibilities for trans-border cooperation between states and regions as well as for the establishment of sustainable regional development, especially through ecotourism, considering the outstanding connection of nature, culture and history as a unique selling proposition and competitive advantage particularly important for structurally weak areas along the Green Belt. The great potential of this initiative for the historical documentation and clarification of the Cold War as well as for the merging of old and new EU-member

states, candidate countries, potential EU-candidates and non-EU-countries is obvious.

In addition to the numerous local trans-boundary nature conservation, environmental education and nature-tourism projects along the Green Belt, EU-funded projects covering large parts of the European Green Belt were and are implemented. Two examples are the Baltic Green Belt project (January 2009 - January 2012, www.balticgreenbelt.net) with 22 partners (13 partners and 9 associated partners) from Germany, Poland, Russia, Lithuania, Latvia, Estonia and Sweden (Coalition Clean Baltic) supported within the Baltic Sea Region Programme and the project GreenNet (April 2011 - March 2014, www.greennet-project.eu) with 22 Project partners (thereof 11 associated partners) from Czech Republic, Germany, Austria, Slovakia, Slovenia and Italy, supported within the Central Europe Programme.

Chance and Challenge for European Nature Conservation

The conspicuous accumulation of large scale nature reserves along the 12,500 kilometers of the former Iron Curtain make the outstanding importance of the Green Belt Europe for the European ecological network: 39 national parks are situated directly along the Green Belt, 16 of them are trans-boundary national parks. Schlumprecht et al. (2009) found that more than 3,200 nature protected areas can be found within a 25 kilometers buffer zone on either side of the Green Belt. Furthermore, this ecological network connects all European biogeographical regions. The European Green Belt is a retreat for many endangered and rare habitats as well as animals and plants and a very important corridor for the migration of endangered large mammals. Therefore it represents a unique European nature heritage.

The implementation of the Green Belt Europe as one of the largest European and trans-boundary ecological networks is one of the main challenges of European nature conservation in the next decades. The existing nature reserves and pristine landscapes should be conserved as core areas and the landscapes next to and between them need to be developed as stepping stones for species. In this way, the European Green Belt contributes to the implementation of the Convention on Biological Diversity (CBD) and Natura 2000 (EU Habitats Directive 92/43/EWG). Furthermore the European Green Belt will contribute to the implementation of the six main aims of the EU-Biodiversity Strategy for 2020.

Leibenath et al. (2009) and the European Environmental Bureau (2008) describe the importance of the Green Belt in combination with other large scale ecological networks, like the Alpine-Carpathian network or the ecological network along the Rhine river. The mentioned large scale ecological networks do not only support trans-boundary cooperation, they also are a chance to halt the loss of biodiversity at least in parts.

Conclusions

The further protection and development of the Green Belt Europe as Pan-European ecological network and historical heritage is a big challenge for the next decades. Therefore

the EU is asked to support the Green Belt, referring to target 2 of the EU-Strategy on Biological Diversity. To achieve these objectives, further trans-boundary projects need to be supported by the European countries as well as by the EU also including EU-candidates and non EU-countries. Regarding the EU-level, this requires a special priority for the preservation and support of the ecosystem function of the European Green Belt in currently implemented and future infrastructure projects; as well as the trans-boundary harmonization of conservation area management, the closing of gaps within the ecological network and the establishment of additional trans-boundary protected areas as core areas and buffer zones. Moreover an adaption of the EU-subsidy policy is urgently necessary; e.g. the comprehensive coordination and restriction of biomass production and industrial agriculture, which currently endangers the ecological network of the Green Belt and its unique landscapes. Instead, a support of ecological land use and sustainable regional development along the Green Belt is needed.

Above its uncountable value for nature conservation, the European Green Belt is also a European cultural heritage of invaluable asset. It is both a commemorative landscape and a living monument for the overcoming of the Iron Curtain and the Cold War just as it is a symbol for the overcoming of the separation of Europe. Therefore the long-term objective is to nominate the European Green Belt as UNESCO (natural and cultural) World Heritage.

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