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POLITICAL BORDERS UNDER ECOLOGICAL CONTROL IN THE POLISH BORDERLANDS

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Abstract

In Central and Eastern Europe, including Poland, many protected areas are situated in the borderlands. Borders (e.g. between states), boundaries (of protected areas), and frontiers (e.g. an eco-frontier) are produced by humans and underline control and ownership of land (territory). These borderlines overlap with each another – can be visible or not, and function as barriers to the flows and economic activity of human beings, with their juridical consequences. In this paper the focus has been placed on the role of that borders play in the construction of space, especially in relation to attractive natural areas in the borderlands of Poland, whether or not they are protected. Additionally the author proposes and tries to illustrate the role of the ‘periodisation’ of nature protection in the borderlands and the relationship between them.

Key words

Poland • border • national park • transboundary cooperation • protected area • eco-frontier

Introduction

The establishment of protected areas is a process of social spatialisation (Paasi 1996). The construction of protected areas is negotiated between different actors which have different power: local, national and international. Some areas have better location and ecological importance than other places. In Central and Eastern Europe, many National Parks are situated near state borders (Denisiuk et al. 1997) – e.g. on the Polish-Slovak, Polish-Czech, Czech-Slovak, Slovak-Hungarian or Czech-Austrian

borders. According to Young and Rabb (1992), borders in Eastern Europe are associated with fascinating and relatively unchanged areas of nature and wildlife, especially in mountainous areas. “Nature, rather than being separate from the societal, is always social and political, always an intrinsically discursive construction” (Fall 2005: 267).

Borders are produced by humans and underline control and ownership of land (territory). These lines could be: borders, boundaries of protected areas (e.g. National Parks, Landscape Parks), or frontiers. Some of them

are the ecological frontier and should be understood as the boundary between civilisation and wilderness and can be located in a borderland (Guyot 2011). The current conception of eco-frontiers is a result of the historical construction of nature and space. In this discussion an eco-frontier is a result of path dependency on valuable natural areas, which are spaces where the ecologist dominates (Guyot 2011). Areas along national borders, especially *glacis borders*, can be peripheral from the socio-economic standpoint, but often contain valuable natural landscapes bearing few marks of human influence. This absence results from the conjunction of their peripheral location, their economic and social marginalisation, and their inferior indicators as regards population density, economic development and isolation (Miszczuk 2013). Many borders were drawn in unpopulated areas which have remained undeveloped buffer and/or transition zones between countries: these factors can favour the decision to embark upon a conservation process with a view to natural uniqueness being protected. Additionally the areas adjacent to the borders, which long isolated them from the outside world, are often now places which concentrate conservation efforts, with a quest to ensure the legal protection of wilderness, sometimes on both sides of a border (Ramutsindela 2014; Więckowski 2013) and play an important role in the creation of transboundary peace parks (Ramutsindela 2004, 2014) in cross-border cooperation (Więckowski 2002, 2013, 2014; Laslaz 2009; Dołzbłasz 2010, 2013; Ramutsindella 2014), and tourism development (Więckowski 2002, 2010; Chiusti & Saarinen 2017). The processes of relationships between nature protection and borders differ in time and space. According to Ramutsindela (2015:135), "Nature is one of the oldest vehicles along which borders were drawn and enacted that need to be recovered by present studies to understand how and why various aspects of nature are continuously involved in border producing processes and the outcome thereof". In this paper the focus has been placed on the role

that borders play in the construction of space, especially in relationships to attractive natural areas whether they are protected or not. There is thus likely to be a constant increase in the role of pro-environmental activity in seeking to preserve the environment in a form as little modified as possible, in the significance of protected areas, in tourist use, and in the need for joint action with regard to the relationship between tourism and nature conservation. This paper tries to illustrate the role of 'periodisation' of nature protection in borderlands and the relationship between them.

National political borders and the boundaries between civilisation and wilderness

In borderlands we can observe many borderlines corresponding to divisions between administrative, state and protected areas (with different strengths and permeability) as well as eco-frontiers (lines or zones between wilderness and human presence; Guyot 2011). These borderlines overlap with one another – and can be visible or not. The lines that function as the strongest barriers to the flows of human beings are national borders and the borders of protected areas, with their juridical consequences. The boundaries of national parks and nature reserves limit strictly protected areas with heavily restricted human activity and presence. These areas function rather as closed, isolated islands featuring eco-dominance, which could be defined as areas designated as giving priority to nature with very limited human presence. Many border areas constitute unpopulated and undeveloped transition zones between countries. They owe their condition to their peripheral location, to economic and social marginalisation, to low population density and economic development and to isolation (Timothy 2002; Miszczuk 2013). Long periods of isolation help to maintain wildlife and vegetation in a close to natural condition and good environmental health. In many cases this high quality and uniqueness translates into legal protection. The existence of boundaries as barriers and

borderlands remaining isolated on the periphery have contributed to an improvement in the quality of the natural environment, which has resulted in the establishment of a number of areas of legally protected nature in close proximity to boundaries (Young & Rabb 1992; Denisiuk et al. 1997; Więckowski 2013, 2014).

As borders change into filtering or open borders, joint protection or even cross-border cooperation schemes develop thus increasing the significance and size of the protected areas, which become more attractive, but also more exposed to human impact. When the border is relatively well sealed, areas of protected nature are often designated independently on either side of the border. Nature protection tends to constitute major aspects of cross-border cooperation, primarily relating to the use of the natural environment and to its political context (e.g. state control of peripheral areas). Interesting examples of conservation areas have been studied on the borders between Argentina and Chile (Miniconi & Guyot 2010), Bolivia and neighbouring countries (Bruslé 2007), Canada and the USA (Mouma-neix 2007), South Africa and neighbouring countries (Ramutsindela 2004, 2014), Mozambique and neighbouring countries (Lunstrum 2013) Sweden and Norway, or Poland, Slovakia and Ukraine (Turnock 2001; Więckowski 2002, 2004, 2013; Fall 2005; Dołzbłasz 2010). In favourable conditions naturally protected areas on borderlands play an important role in cross-border cooperation. According to Price (2015) it may be hypothesised that if cooperation is initially focused on specific and clearly agreed themes, there is greater potential for expansion to other themes once some successes have been achieved and trust and good working relationships have developed. This can be demonstrated by many examples of practical activities in conserving biodiversity, socioeconomic development and promoting a culture of peace in transboundary areas. The establishment of the Kgalagadi Transfrontier Park has provided a useful model for demonstrating the institutional arrangements for establishing a TFCA, which has to address political and legal issues, regional

support, the role of government departments and conservation agencies, community participation and the financial requirements (Hanks 2008). Africa's idea of a peace park should be an example of best practice in many ways, also including conservation, cooperation and tourism development as well. In some cases transfrontier areas are even very important tourist regions (e.g. Chiusti & Saarinen 2017).

In Central Europe we find borderlands which constitute very important tourist regions (Turnock 2001; Zawilińska 2013; Więckowski 2010, 2013). They are attractive areas in terms of nature, landscape, and tourism, owing to which human impact is amplified, along with the tourist traffic associated with this, while, on the other hand, there exists a strongly developed need to protect these areas. In many National Parks tourism has played an increasingly important role throughout the 20th century, with the development of diverse infrastructures to welcome this financial potential. This phenomenon implicates a major paradox for the park, due to the simultaneity of highly endemic zones (therefore of strong ecological interest) and tourist zones (therefore of strong economic interest). The objectives pursued by the States are numerous: securing their borderlands while using nature as a nationalist symbol, state control of peripheral regions where local people have been removed from protected areas, and the use of UNESCO Biosphere Reserves in some places to give new international legitimacy to border control. According to Więckowski (2013), "(...) Two processes weigh heavily on the functioning of eco-frontiers in border areas. One of the processes has to do with national borders, which range from closed borders featuring strong barriers to open borders conducive to integration. The other process involves the human impact on the environment and its spectrum ranges from wild nature that is unchanged by humans to intense human (e.g. development of tourist traffic)". Depending on the dominant process a given border area can be located in one of the four quarters in Figure 1 (Więckowski 2013).

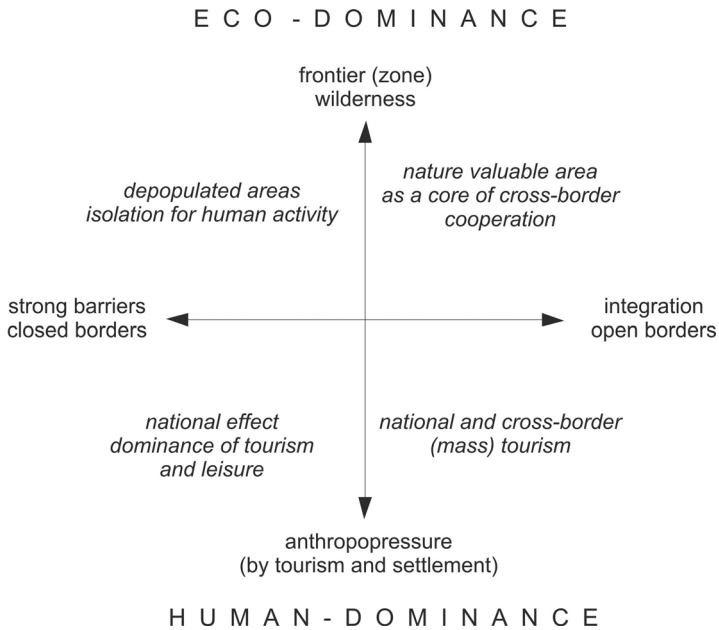


Figure 1. Relationships between mobile borders and human impact on the environment

Source: Więckowski 2013, 2014

Nature protected areas and borderlands – the Polish context

Many protected areas in Poland are located along the country's borders (Kałuski 1994; Degórska 1994; Rąkowski 2000; Więckowski 2004, 2013), and this is true of no fewer than nine National Parks. Additionally, two National Parks are located along the Baltic coast, while three more are close to a border. Five National Parks enjoy an international status in connection their counterparts on the other side of the border (i.e. the National Parks in the Karkonosze, Tatra, Bieszczady and Pieniny Mountains, as well as Białowieża (Białowieżski National Park). These areas are situated far from capitals, big cities and other economic growth poles. From the historical point of view borders dividing these peripheral areas are sometimes classic subsequent borders in the Hartshorne typology (Hartshorne 1936).

In the Polish context, the borderlands constitute a kind of eco-frontier, which we can understand as zones under the domination

of nature (with human presence absent or limited). These areas are divided into many protected natural areas with different levels of control. The presence of an eco-frontier is much more visible in the peripheral location that borderlands can represent. Eco-frontiers in Poland and neighbouring countries (especially along the Polish-Slovak border) seem to provide a good example of eco-frontiers in borderlands (Więckowski 2013). They represent two generations of eco-frontiers: geopolitical eco-frontiers and global eco-frontiers. These generations are more closely related to state control of peripheral regions. This process began between the Wars and culminated during the Cold War. The third and contemporary generation embraces the current success of environmentalist thinking on a global scale, driven mainly by international organisations, NGOs and civil society (Guyot 2011). The process of the development of protected areas related to the border changes in the borderlands of Poland can be divided into five stages. All of them are presented in Table 1.

Table 1. Processes of development of protected areas related to border changes in the borderlands of Poland

Period	Types of protected area	New processes concerning nature protection and the border regime	Spatial process	Functional process	Examples
Before WWII	<ul style="list-style-type: none"> national parks, nature reserves 	<ul style="list-style-type: none"> protection of very interesting natural areas (wild nature, areas en-dangered by human impact) by law 	<ul style="list-style-type: none"> closing of areas isolation 	<ul style="list-style-type: none"> museumification, strong strict protection 	<ul style="list-style-type: none"> Białowieża National Park Pieniny National Park
From 1945 to the end of the 1960s.	<ul style="list-style-type: none"> national parks, nature reserves 	<ul style="list-style-type: none"> 're-organisation' of national parks and nature reserves 	<ul style="list-style-type: none"> new locations new borders 	<ul style="list-style-type: none"> peripheralisation of border areas (edge/isolation) increasing of the natural value of protected natural areas 	<ul style="list-style-type: none"> Babia Góra National Park Tatry National Park Białowieża National Park
1970-1991	<ul style="list-style-type: none"> creation of landscape parks and UNESCO biosphere reserves 	<ul style="list-style-type: none"> protection of the area on one side of a border landscape park – soft protection biosphere reserve – new idea, but overlapping with existing protected areas – mostly national parks 	<ul style="list-style-type: none"> relative 'softening of nature protection' protection of less important areas larger areas than before collaboration access to protected areas but on specific terms 	<ul style="list-style-type: none"> initiation of new idea of landscape parks and creation of biosphere reserves some attempts at collaboration with the local population. 	<ul style="list-style-type: none"> biosphere reserves, e.g. Luknajno, Babia Góra, the Tatras Landscape Park, e.g. Góry Słonne
1992-2004 (2007)	<ul style="list-style-type: none"> creation of trans-boundary biosphere reserves 	<ul style="list-style-type: none"> opening of the borders joining of areas on 2 or 3 sides of borders cross-border cooperation 	<ul style="list-style-type: none"> enlargement of the protected areas (spatially) enforcing the change and rank in the protection of protected areas in the neighbouring countries (e.g. Poloniny N.P.). 	<ul style="list-style-type: none"> 'touristification' new border crossings new tourist infrastructure (e.g. paths) fast changes of border functions 	<ul style="list-style-type: none"> trans-boundary biosphere reserves: Karpaty, Tatry, Karkonosze
After 2004 (2007)	<ul style="list-style-type: none"> creation of NATURA 2000 areas 	<ul style="list-style-type: none"> new European regulations – insertion of the NATURA 2000 areas adhesion of Poland and other countries to the EU (2004) and to the Schengen zone (2007) 	<ul style="list-style-type: none"> attempting to connect to the network and corridors differentiation of border functions weakening of the role of political boundaries (apparent/relative increase in the significance of the boundaries of national parks) 	<ul style="list-style-type: none"> different laws, rights and weight of protected areas in neighbouring countries different 'pressures' for differentiation of 'use' 	<ul style="list-style-type: none"> trans-boundary biosphere reserve Polesie Zachodnie

Source: author's proposed classification.

Creation of the national parks before the Second World War

Early initiatives included the establishment of several reserves (since the 19th century) and National Parks (since the 1930s). The first one – Pieniny National Park (1932), became Europe's first cross-border protected area together with its counterpart across the border with Slovakia (Czechoslovakia at that time) in 1932. Establishment of the protected natural areas was disrupted by the Second World War. Białowieża National Park was created far from the borders at that time. The first period of creating protected natural areas concerned the most important natural areas with wild nature and areas endangered by human impact. The creation of new national parks was an important element of new national identity after the partition of Poland between three empires. Since the ideas of nature preservation emerged over a century ago, national parks and other protected areas have been marked off, interpreted, museumised, and labeled for the purposes of tourists and society (Saarinen 2004; Sandell 2005; Reinius, Fredman 2007). In many places, such areas have become tourism products that the industry promotes and sells as attractions. Their touristification is exemplified by the following: national parks have become tourist icons with many countries promoting some of their parks as 'must-see attractions' (e.g. Tatra National Park).

Period between the end of the WW II and the end of the 1960s.

The shifting of Polish territory to the West and establishment of new borders (Eberhardt 2012, 2015) were the main factors affecting Polish territory and the border changes after WWII. The first period after WWII involved the 're-organisation' of national parks and nature reserves, mainly with the re-establishment the same parks as created before WWII, with new less stringent legal regulations.

During the communist era (1945-1989), the tightly-closed Polish borders effectively stopped the movement of people. This was

part of a policy entailing the discouragement of economic activity in wider border areas, and in the official border zones in particular – a factor that long hampered local socio-economic development. Many border areas remained isolated for decades (e.g. the Beskid Niski Mts. – after WWII, and up to the beginning of the 1990s.), or for a period of time (e.g. the Bieszczady Mountains between 1945 and the 1970s), while entire regions were marginalised. Long periods of isolation and low accessibility helped maintain wildlife and vegetation in close-to-natural conditions and good environmental health (e.g. in the Eastern Carpathians). As a result the most important processes were the peripheralisation of border areas (edge/isolation) and in consequence an increasing of the natural value of the protected natural areas.

Period between 1970 and 1991

In the second part of the socialist period in Poland new concepts of nature protection were introduced (initiation of the new concept of landscape parks and the creation of Biosphere reserves). Many areas were located near the border but on one side of it. In some cases new protected areas were even created on both sides of the border and cooperation between the two was forbidden by national law. The creation of Biosphere Reserves was a new idea, but was linked to existing areas and overlapped with existing protected areas – mostly with national parks. The main process was a relative 'softening of nature protection' and the protection of less important areas. There were some new attempts at collaboration with the local population. Access to protected areas, especially to the natural parks and landscape parks, was easier but on specific terms.

In Poland the best examples of areas overlapping borders as well as an eco-frontier is the Polish-Slovak borderland. In the Polish-Slovak borderland many protected areas with many different borders exist. As the national borders were closed and rendered largely inaccessible, for more than

a century this contributed to the conservation of natural conditions and the maintenance of biodiversity.

Debordering and new transboundary protection (after the beginning of the 1990s)

When the border was relatively well sealed, the perimeters of protected nature have often been designated independently on either side of a border. But as borders change into filtering or open borders, joint protection or even cross-border cooperation schemes develop, thus increasing the significance and size of the protected areas, which become more attractive, but also more exposed to human impact. Nature protection and eco-frontier building tend to constitute major processes within such cross-border cooperation. That cooperation included efforts to designate joint protected areas (e.g. International Biosphere Reserves and cooperation between National Parks). On the one hand, from the geopolitical point of view, the Polish borderlands (e.g. between Poland and Slovakia, Ukraine and Belarus) constitute buffer zones with many National Parks divided by the international borders. On the other hand, these borderlands constitute a kind of a global eco-frontier. The process of opening up the borders (changing their functions) creates a new situation and encourages the establishment of cross-border parks, green edges and environmental networks, as well as the development of eco-tourism. Poland's recent European integration has changed these functions towards openness, thereby encouraging the integration of neighbouring territories. At the same time, the external EU and Schengen zone borders have been tightened, although they remain much easier to cross than before 1989. New levels of human impact have been experienced due to both settlement and tourism, associated with a rising standard of living, an increase in mobility (tourist traffic and transit), and an expansion of infrastructure, including roads that have increased the accessibility of areas recently considered very remote, such as those found close to borders

(Więckowski 2002; Więckowski et al. 2014; Michniak et al. 2015).

Cross-border cooperation on environmental matters has advanced significantly since 1989 when the opening of borders facilitated contacts and fostered cooperation as protected areas in frontier zones came out of isolation (Turnock 2001). National Parks located on either side of the Polish borders have recently become important actors as regards collaboration in a number of domains, including nature conservation, tourism, transport, water management, forestry, trade, culture and education (Więckowski 2002; Więckowski 2013, 2014). Its main activities were regular meetings of managers of protected areas, and the publication of newsletters and other publications (e.g., Voloscuk 1999). "Transboundary protected areas are much more complex than simple encircled areas stretching across international boundaries. Rather than unproblematically defining one Self and one Other, these entities create multiple Selves and multiple Others in an overlapping and conflicting patchwork of multi-scalar identities" (Fall 2005: 10). This was a period when there was room to enforce a change including the rank of protection of the protected areas in neighbouring countries (e.g. Poloniny N.P.). For instance, the cross-frontier/cross-border protected areas linked to environmental networks supported by globally operated NGOs are central to this new geopolitical reality linking nature and space (Fall 2002). "Cross-frontier parks have an economic logic, namely, the use of nature in the promotion of tourism and economic development" (Ramutsindela 2004). These transboundary protected areas were constructed discursively by the different "relations and links within heterogeneous social networks that included both human and non-human actors" (Fall 2005). According to Ramutsindela (2004), the link between wilderness and transfrontier parks is articulated in the vision of restabilising the 'natural' ecological systems that had been interrupted by humans.

The creation of the idea of protection by isolating nature was continued even during the

transformation period and cross-border cooperation. The concept of joining (spatially) protected areas adjacent to the border on both sides did not change the concept of isolated islands. The main difference was the covering of a bigger area by the new entities, with a declining role of the national frontier as a barrier. The Polish-Slovak borderland is functioning as an eco-frontier in the contemporary, third-generation meaning of the term. Much of the area is characterised by eco-dominance, mainly due to strong legal protection. Rather than a large single eco-frontier it forms an archipelago of smaller islands of National Parks and other protected areas.

Contemporary processes – after 2004

After the adhesion of Poland and other countries to the EU (2004) and to the Schengen zone (2007), new processes have appeared. First of all differentiation of border functions has taken place (especially two megatypes of border: internal and external) and new European regulations were implemented (different laws, rights and weight of protected areas) as well as different ‘pressures’ for differentiation of ‘use’ (Więckowski 2013). According to S. Dołzbłasz (2013) the main goals of cross-border cooperation in the field

of environmental protection are: pro-ecological activities – cleaning and afforestation campaigns, ecological education, creating films and public actions connected with ecology.

Despite the appearance of the NATURA 2000 protected areas, the concept of the protected area as an island has been extended. Even the existing ecological corridors (e.g. NATURA 2000) are bisected by transport infrastructure. Instead the new corridors that have been created have had a new role of linking protected areas which do not have strict and fixed borders. These areas covering existing National and Natural Parks, as well as reserves and other forms have an important role in limiting human activity (especially economic activity), through borders not visible in space (only marked on maps). Eco-dominance may result in certain barriers to development, but can also create a basis for the development of tourism, especially ecotourism. Tourism indeed constitutes the leading, and sometimes the only industry in such areas (see Więckowski 2010; Zawilińska 2013; Więckowski et al. 2014; Michniak et al. 2015). The national parks adjacent to the Polish border are shown in Table 2, and a different level of nature protection and boundaries operate for example in Poland and Slovakia as is shown in Table 3.

Table 2. National Parks directly adjacent to the Polish state border (from the both sides) (2017)

	National parks on both sides of a border	National parks on one side of a border	
		On Polish side	On neighbouring country side
Internal border of the Schengen zone	<ul style="list-style-type: none"> • Tatra NP (Poland, Slovakia) • Pieniny NP (Poland, Slovakia) • Karkonosze NP (Poland, Czech Republic) • Bieszczady NP (Poland), Poloniny (Slovakia) 	<ul style="list-style-type: none"> • Magura NP • Babia Góra NP • Góry Stołowe NP 	<ul style="list-style-type: none"> • Unteres Odertal (Germany)
External border of the Schengen zone	<ul style="list-style-type: none"> • Bieszczady NP (Poland), Użański (Ukraine) • Bieszczady NP (Poland), Nadsański (Ukraine) 		<ul style="list-style-type: none"> • Szacki NP. (Ukraine)

Source: author's assessment

Table 3. Different levels of nature protection and boundary function. (ex. Poland and Slovakia)

	Level of protection	The role of borders	
		Poland	Slovakia
Biosphere reserves	INT	Medium – visible	
NATURA 2000	EU	Not visible; with important restriction to economic development	
National Parks	National	Very strong – visible	Strong – visible
Natural Parks	National	Medium – visible	Medium – visible
Nature Reserves	National	Very strong – visible (small area)	Very strong – visible (small area)
others	National	Weak	Weak

Source: author's assessment

Since Poland's accession to the EU and the Schengen zone, the crossing of its national border has no longer been restricted to formal crossing points, and the border as a barrier has gradually disappeared, allowing nearly entirely free movement of people and business. The control of people has been moved to other places in the territory of states, but the possibility of closing the borders also exists due to political reasons (e.g. blockage of a road), ecological reasons (e.g. closing of a road or a path into the national parks) or other reasons (e.g. sanitary). In Central Europe many cycles of mobile border have appeared: seasonally (annually), weekly and daily, connected with the openness of the border crossing points, national parks and tourist paths, which processes influence the permeability of a border. While the barrier function was eroded from the national borders, it gradually developed at the boundaries of protected areas, especially National Parks. Currently we can observe the process of separation of national borders and protected areas in a new way. The national border demarcates political appartenance to a given country. The separating line divides one country from another and strongly depends on bilateral interactions and wider relationships (e.g. involvement in international organisations, like the European Union). In the EU, and especially in the Schengen zone, the borders are permeable and fully open for people to cross them, but this situation does not change the existence of the border line and the different laws in neighbouring countries.

Protected areas and their borders appear as different new spaces with control over ecological domination, in many ways: separately in each country (due to different protection legislation), differently in each type of nature protection, with imposed international protection (e.g. Biosphere Reserves, sometimes transboundary, sometimes not) or European protection (e.g. NATURA 2000). Such eco-frontiers have become cyclical off-limit zones. There has thus been a pulsating reality of border openness and closure, in temporal, spatial and national terms.

Nowadays many factors influence the functioning of eco-frontiers. However, the four main factors include: the need for nature protection (at national and international level: e.g. the creation of Biosphere reserves, and NGO activity), tourist demand (on behalf of people coming from 'outside'), the local population's needs (and economic interest), and cross-border cooperation (supported by EU funds). A new one has now appeared – non-governmental organisations.

Conclusions

The majority of the areas along the Polish national borders are peripheral from the socio-economic standpoint, but they often contain valuable natural landscapes bearing few signs of human influence. These factors favour the decision to embark upon a conservation process with a view to protecting the uniqueness of their nature. The location of borderlands

at the periphery of the state facilitates the emergence of other kinds of border, especially, the borders of protected natural areas, which underline the division between nature and human presence. These borders and areas with 'eco-control' are at the same time the eco-frontiers in contemporary meanings (as they were called by Guyot 2011). As political borders can be shifted and completely opened, the borders of protected areas cannot be fully open for human presence. Of course the openness of borders of protected natural areas depends on the hierarchy and level of protection (on a national and international scale). However the process of decision making concerns the establishment of the entry point and the rules of openness and closeness as an element of mobile borders (both political and ecological) and these are linked and negotiated between different actors which have different power: local, national and international (e.g. political, conservationist).

In the Polish context the creation of transboundary protected areas, especially transboundary Biosphere Reserves, is an important element of the underlying spatial similarity and cross-border cooperation (even without real integrating cooperation), as well as of eco-dominance in the borderland. On the one hand Polish borderlands (e.g. between Poland and Slovakia, Ukraine, Belarus) constitute buffer

zones between countries from the geopolitical point of view, with many national parks, divided by international borders. On the other hand these borderlands constitute a kind of global eco-frontier from the contemporary point of view. The process of the opening up of boundaries (a change of function) provides a new situation and is useful in the creation of transfrontier parks, green edges, an environmental network and eco-tourism development. They are also very important areas of world heritage sites.

The process of creation of the contemporary network of protected natural areas, the source of many boundaries in the borderland, was relatively long. The creation can be divided into the five stages proposed by the author. The dynamic model proposed helps us to understand the role of established boundaries and the processes that developed over the decades. We need much additional, detailed research, and this could make use of some of the theoretical issues proposed in this article, especially concerning the relationships between mobile borders and the human impact on the environment.

Editors' note:

Unless otherwise stated, the sources of tables and figures are the authors', on the basis of their own research.

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