



Are bilateral conservation policies for the Białowieża forest unattainable? Analysis of stated preferences of Polish and Belarusian public



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ABSTRACT

Transboundary nature protected areas constitute a considerable proportion of all the existing spatial forms of biodiversity protection. One prominent example is the Białowieża Forest, shared by Poland and Belarus. There is a considerable literature on allocation of funds to preserving nature shared by several countries. Some of this literature assess the funding schemes and the impacts on biodiversity within the EU. A particular challenge for the Białowieża Forest is that the larger part of it is outside the EU border. There has been less research on the economic benefits that citizens attach to protected transboundary land nature on the other side of the border. We are trying to fill the gap by finding out and comparing preferences towards increased protection of domestic and foreign segments of the transboundary Białowieża Forest, stated by samples of Polish and Belarusian citizens. The results of a discrete choice experiment show an almost unilateral preference for nature conservation, passive protection of forest land, on the domestic side. Whilst Polish respondents on average are willing to pay for an increased area under protection, on their side of the border, most Belarusians seem to be satisfied with the status quo. Taken at face value, there is even an apparent mutual disutility derived from the perspective of co-financing bilateral passive protection programmes in the Białowieża Forest. By use of latent class analyses of responses, a group of the Polish sample willing to contribute to the transboundary conservation is identified and described, and compared against the non-cooperative groups on both sides of the border. The results can to some extent be explained by a strict border division with a high fence, by differences in welfare or by behavioural reasons. However, it cannot be ruled out that the affected populations simply do not perceive the Białowieża Forest as a binational public good.

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Introduction

There are many cross-border nature areas around the World, and several have gained some transboundary protective status during the last decades (Deguignet et al., 2014). In Europe, national protected nature areas are mostly small and scattered, and transboundary cooperation has been considered a necessity (European Commission, 2013). Effective cross-border cooperation in protecting nature might be easier to obtain within a common political

community, like the EU, than across borders that represent larger divides (Donald et al., 2007; Bode et al., 2008). The Białowieża Forest is shared between the EU country Poland and Belarus; thus there is no common EU-based regulatory policy directing the conservation policy on both sides of the border.

Economic literature scrutinising transboundary protected areas explicitly is rather scarce. The economic problems of transboundary protected areas should be analysed in a wider context of economics of the natural goods, which are generated and enjoyed internationally. Busch (2008) applied a game theory approach to the problem of optimal spatial allocation of transboundary protected areas. Donald et al. (2007) found an indication of relative improvement for species and habitats targeted by specific EU policies compared to areas out-

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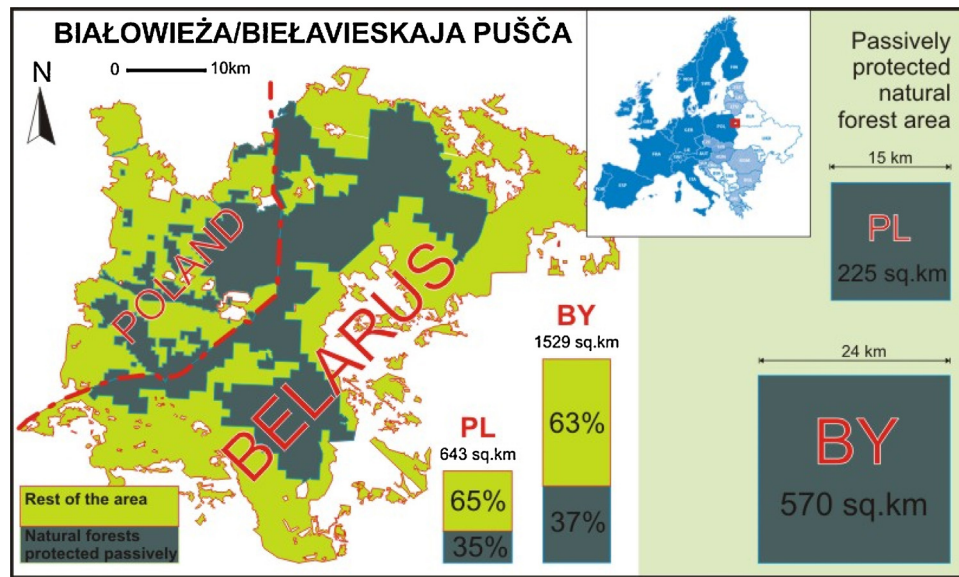


Fig. 1. Map of the transboundary Białowieża Forest.

side the EU. For naturally contiguous areas shared by countries with substantially different cost levels, Bode et al. (2008) argued that more nature conservation could be obtained by investing most in the lower-cost country. Bladt et al. (2009) followed a similar argumentation for the allocation of nature conservation between EU member states, and their results yield an argument for co-operative action. Semmens et al. (2011) analysed the situation where the provision of ecosystem services partly takes place in another location than where the humans benefitting from it are living.

The valuation of international public goods of transboundary nature in Europe has been formerly applied primarily to the marine environment, e.g., the Baltic Sea (Markowska and Żylicz, 1999; Ahtiainen et al., 2013, 2014). Ahtiainen et al. (2013) found that the richer countries had “the most positive attitudes towards contributing financially to improving the state of the Baltic Sea”. However, unlike international public goods that do not recognise country borders, like sea or air quality, the matter whether a terrestrial transboundary nature protected area qualifies to be an international public good is far from trivial. The area of a transnational park might be considered a combination of two national public goods – i.e. the area of a park considered “domestic” and the area of a park established by the neighbouring country. Following the results from a three-country valuation study by Dallimer et al. (2015), we might expect that individuals will be most concerned about policies affecting their domestic part of a nature area. However, Dallimer et al. did not value a transboundary nature area. We therefore carried out a discrete-choice experiment (DCE) of extending the strictly preserved areas within Białowieża, on both sides of the Polish-Belarusian border in order to find out and compare preferences towards protection of domestic and foreign segments thereof, stated by samples of Polish and Belarusian citizens.

Study area

The Białowieża¹ Forest lying in between Poland and Belarus is considered one of the last intact lowland forests in Europe (Blavascunas, 2014) as well as one of the best known nature pro-

Table 1

Programme attributes and their levels.

Programme attribute	Poland	Belarus
Passive protection extension on the Polish side of the Białowieża Forest	+0 km ² +35 km ² +70 km ² +105 km ² SQ=+0	+0 km ² +35 km ² +70 km ² +105 km ² SQ=+0
Passive protection extension on the Belarusian side of the Białowieża Forest	+0 km ² +35 km ² +70 km ² +105 km ² SQ=+0	+0 km ² +35 km ² +70 km ² +105 km ² SQ=+0
Additional amount of income tax, which you would have to pay annually during five years	25 PLN 50 PLN 75 PLN 100 PLN SQ=0	3 USD [5 USD] 6 USD [10 USD] 9 USD [15 USD] 12 USD [20 USD] SQ=0

Bid levels used for the pilot survey in Belarus are given in brackets.

ected areas in Europe. Approximately one third of the area has never been logged. Due to its relative intactness, the natural forests in Białowieża retain natural composition of forest ecosystems, functions and processes as well as typical forest flora and fauna (Wesołowski et al., 2016). Inter alia, the Białowieża Forest supports the unique semi-wild population of the European bison (*Bison bonasus*), the species once extinct and then restored following an international conservationists' effort. Due to the (Belarusian) border fencing (since 1980), however, the two adjacent national park areas constitute two separated bison habitats (Kraśnińska et al., 2000; Daleszczyk et al., 2007).

A natural reserve was established by Poland in 1921, when the whole of the Białowieża Forest was under its territory, and a national park was established in 1932. Since 1946 the Białowieża Forest has been divided by the new state border into the Polish (about one third) and the (Soviet) Belarusian (the remaining two thirds) segments. In the Polish part a total ban on human interference with the natural ecosystems and processes applies to the Białowieża National Park and twenty-four nature reserves, amounting to 225 km² or approximately 35% of total surface of its afforested area. In the Belarusian part passive protection regime applies to the strict conservation zone of the Bielavieskaja Pušča National Park and makes up a total of 570 km² or about 37% of the

¹ The Belarusian name of the study area is Bielavieskaja Pušča. For simplicity in the text we use the internationally better known Polish name thereof – Białowieża Forest

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