

ASSESSMENT OF THE POSSIBILITY OF TOURISM DEVELOPMENT IN BIAŁOWIEŻA FOREST AFTER THE SPRUCE BARK BEETLE OUTBREAK

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ABSTRACT | The development of tourism depends to a large extent on the natural environment but nature also depends on tourism. The area of Białowieża Forest has changed its appearance to a large extent after the bark beetle outbreak. Therefore, it was decided to conduct research among full-time and part-time students of the Faculty of Forestry of Białystok University of Technology in Hajnówka, as future employees of forest areas and local government employees, on their opinions about spruce stands and further actions in the field of tourism development in Białowieża Forest. The research concerned two topics: whether tourism will develop more intensely after the infected trees are left or after they are felled. In the research, the diagnostic survey method was used and the survey technique in the form of a questionnaire in accordance with the above-mentioned method.

Introduction

In Podlaskie Voivodeship there is a significant number of places and towns which attract tourists with their values and tourist attractions. It should be stated that each region has different determinants, and the possibilities of tourism development are most often identified with the existence of values and tourist attractions. Białowieża Forest is a special place in terms of tourist values.

The area of Białowieża Forest is one of the most attractive tourist regions of the Podlaskie Voivodeship due to its location on the borders with Belarus and as the most valuable forest complex in Europe and a natural lowland forest with the kingdom of the largest European mammal which is the European bison (Grodzki, 2016, pp. 324–331).

The attractiveness of each area is primarily its climatic conditions, uncontaminated environment, the diversified configuration of the area and existing attractions. Despite the fact that travelers rarely refer directly to the issues of environmental protection, natural and cultural values are an important component of the choice of the place of travel. A tourist choosing a place of travel and rest always looks for areas characterized by a relatively higher share of tourist values and attractions. However, not only forest areas or surface waters but also tourist and para-touristic infrastructure determine the development of the tourist function of a given area.

The natural, landscape and cultural values make the Białowieża Forest a frequent place of visits for tourists who appreciate contact with nature. It is also a special area in terms of diversity of tourist products. However, it is not fully used by tourists. Local entrepreneurs and local activists believe that uncontaminated environment and ecological food are sufficient to encourage tourists to visit Białowieża Forest.

In the analysed area the problem of the outbreak of the spruce bark beetle has recently emerged. Analysing the development of tourism in this area, supporters and opponents of cutting down coniferous trees attacked by the spruce bark beetle have appeared, justifying their theories for both variants that tourism will develop without any fears.

The aim of the study is to present the results of research on the development of tourism after the outbreak of the spruce bark beetle. The research allowed to indicate the optimal variant concerning further future actions in the field of management of spruces attacked by the spruce bark beetle.

Research methods and research material

In the research, the method of diagnostic survey was used with the use of a survey technique, literature analysis and the method of observation. The survey questionnaires were addressed to students and representatives of local governments.

The survey study involved 44 full-time students (3rd and 4th semester students) of Białystok University of Technology, 46 part-time students (3rd and 4th semester students) and 53 selected local government employees from Hajnówka and Białystok counties who are familiar with the subject of Białowieża Forest. It should be added that Białystok county borders on Hajnówka county and some residents often visit Białowieża Forest. In total 143 questionnaires were submitted and 136 questionnaires were obtained, i.e. 96.4% of the respondents. The questionnaire contained 55 closed and open type questions. The research concerned the evaluation of tourism development in Białowieża Forest after cutting down trees attacked by the spruce bark beetle and leaving them intact. These are opinions which, according to the respondents, give a picture – a vision of which variant is the most optimal, felling or leaving spruce trees dry for tourism in order to develop more

dynamically. Their opinions are important as they are future employees of forest inspectorates and other forest areas (national parks, landscape parks, Natura 2000), as well as people interested in the situation in Białowieża Forest. This applies mainly to part-time students, many of whom already work in forest areas. Employees of self-government were selected to fill in the questionnaires by district governors and heads of commune offices.

The questions included in the questionnaire concerned: the motive for choosing Białowieża and Białowieża Forest to visit; the purpose of coming to Białowieża; the age and sex of visitors; the knowledge about the condition of spruce trees in the Forest; the outbreak of the spruce bark beetle; whether after cutting down dried spruces and removing fallen trees tourists will be more willing to visit Białowieża Forest; which groups of tourists tend to visit Białowieża Forest; the place of permanent residence of visitors; their education; interests; the knowledge of foreign languages; the evaluation of tourist and para-tourist infrastructure; the period of stay; expectations of tourists during their stay in Białowieża commune; the evaluation of Białowieża and Białowieża Forest in terms of attractiveness; the possibilities of increasing tourist traffic in Białowieża Forest. The research was carried out in January, February and March 2018.

Characteristics of the research area

In the area of Białowieża Forest, there is a commune of Białowieża to which the following localities belong: Budy, Czerlonka, Grudki, Podcerkwy, Pogorzelce, Przewłoka, Teremiski, Zwierzyniec. Outside Białowieża commune, the Forest covers the communes of Hajnówka, Narewka, and Dubicze Cerkiewne. Practically in all localities of Białowieża commune, tourists use accommodation and regional cuisine to a greater or lesser extent. Białowieża forest, which is a vast forest complex, is located on both sides of the border between Poland and Belarus and is a remnant of the former Białowieża Forest, Ladzka Forest, Svilots Forest and Shereshevska Forest (fig. 1).



Figure 1. The location of Białowieża Forest

Source: http://www.parki.pl/parki_narodowe/bialowieski_pn/turystyka/mapy/mapa_pb.jpg.

Białowieża commune constitutes 12.52% of the area of Hajnówka district. According to statistical data, the commune covers an area of 203.2 km², including 8% of agricultural

land and 88% of forest land (the data from Białowieża commune office). The commune is inhabited by 2696 people, of which 47.6% are women and 52.4% men. The population density is 13.2 inhabitants/km².

Białowieża Forest is a forest complex with an area of about 150 thousand ha, divided after World War II by the state border. The western part is located in Podlaskie Voivodeship (62.5 thousand ha) and the eastern part in Belarus (87.5 thousand ha) – (*Puszcza Białowieska w liczbach*). The Forest is located in the basin of the Narewka and the Leśna rivers (Kozieł, 2010, pp. 271–284). In 1986 it was recognized as a landscape protection area of 3200 ha. In Białowieża Forest the last fragments of primeval forests in the European lowlands have been preserved including the largest animal in Europe – the European bison. In general, it should be stated that this place is a habitat for various species of flora and fauna. The most valuable part of the Forest in terms of nature is protected within the boundaries of Białowieża National Park and 20 nature reserves. Due to its unique natural values, the entire Polish part of Białowieża Forest was declared as a World Nature Reserve by UNESCO in 2006 (Chocian, Kotowska, 2008, p. 21).

Białowieża is a tourist resort, situated in the heart of Białowieża Forest which stretches from the east to the west for 55 km and from the north to the south for 51 km.

Statistical data show that the majority of the population constitute people aged between 19 and 59. The number of births is very low and the number of elderly people living there is quite high. The reason for this situation is the fact that the number of jobs is too low, as the inhabitants define it, and Białowieża is mainly a “storage place” for middle-aged and older people.

A characteristic feature of the forest complex in Białowieża Forest is the existence of almost all legal forms of nature protection (connected by ecological corridors), such as:

- national park,
- areas of Nature 2000 network,
- nature reserves,
- areas of protected landscape,
- monuments of nature,
- ecological areas (Bołtromiuk, Jakimiuk, 2006, p. 20).

The basic and the most important components of the tourist offer, apart from tourist attractions, are accommodation, catering and tourist information enabling a longer than one-day stay in the area of Białowieża commune. The area of the commune is unevenly developed in this respect. The situation is improving year by year, and new accommodation facilities are being built, but their standard often falls short of the expectations of service users. However, it should be stated that in the area of the commune there are localities where there is not a single categorized accommodation facility. This also proves that due to the low standard of accommodation and a few attractions, tourists do not decide to stay longer. The area of Białowieża Forest has not changed in terms of its attractiveness for several years now, the only change is that the number of dry spruce trees is growing and thus the landscape of the forest area is changing.

The analysis of the research results

Forest areas are an important factor of the attractiveness of the area, and with an effective and optimal forest policy, they may constitute a significant element in the development of tourism. The development of tourism in forest areas is one of the most important forms of using the non-productive functions of forests. For the tourist, it is important that not only natural but also historical and cultural values can be found in forest areas (Jalinik, 2017, p. 251). Forest areas play an increasingly important role as a tourist and recreational areas, especially if they are located near large urban areas. Their residents like to take advantage of the unpolluted environment, devoid of urban noise and pollution. Such a place is undoubtedly the area of Białowieża Forest.

Well-planned and organized tourist services can not only create excellent conditions for relaxation but also contribute to the discovery of such a complex and somewhat mysterious forest ecosystem. As the research have shown, the expectations of respondents regarding forest areas and the use of forest resources are diverse. The research confirmed that visitors to forest areas perceive non-productive functions, and above all in terms of tourist infrastructure, tourism and recreation, ecology, safety, protection and preservation of biodiversity. On the other hand, production functions were less important for the respondents, although criticism was made of the disorder in the Forest (dry spruces, fallen trees), where not only man but also animals have difficulty in moving around.

When asked what the respondents associate Białowieża and Białowieża Forest with, 79.5% of the respondents stated that with bison and forest, 13.5% with the uncontaminated environment, and 7% with regional cuisine. On the other hand, the vast majority of respondents who visited the area stated that they were interested in active recreation and the appearance of the Forest after spruce trees were attacked by the spruce bark beetle (fig. 2).

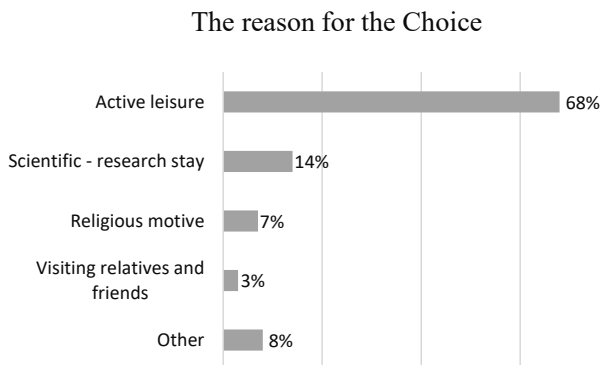


Figure 2. Motives for choosing Białowieża and Białowieża Forest

Source: own study based on the research results.

In the answer to the question whether the development of tourism in Białowieża Forest would be more dynamic if spruce trees attacked by the spruce bark beetle were left without being cut down, the following answers were obtained (fig. 3).

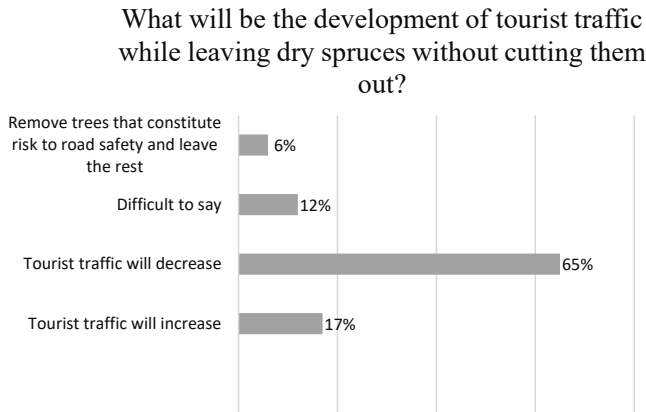


Figure 3. Development of tourist traffic without cutting down dry trees

Source: own study based on the research results.

The respondents also stated that complete cutting down of dry spruce trees would distort the landscape, which would discourage visitors from using tourist services. It was found that spruce trees attacked by the bark beetle which grow near footpaths and bicycle paths, educational paths and public roads, should be cut down, and those fallen trees should be removed. According to 65% of the respondents, this would contribute to increased tourist traffic (fig. 4).

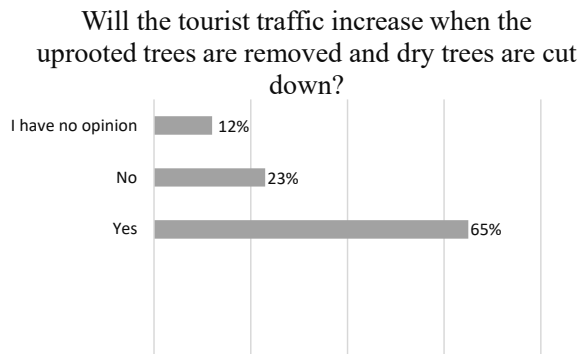


Figure 4. Development of tourist traffic after removal of uprooted trees, which cover the undergrowth, and cutting down dry spruce trees

Source: own study based on the research results.

Quite interesting were the results concerning people who are ready to visit the Forest while leaving the spruces attacked by the spruce bark beetle intact. It was indicated that pseudo-ecologists and adults, who may occasionally come to the Białowieża Forest, would be the most popular visitors (fig. 5).

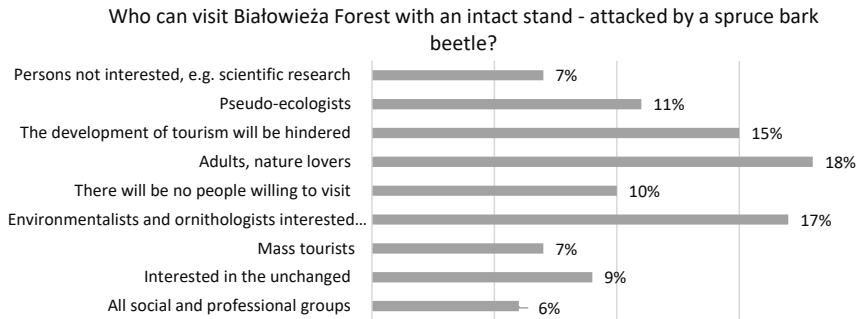


Figure 5. Development of tourism at the outbreak of the spruce bark beetle

Source: own study based on the research results.

After cutting down sick (dry) trees, the respondents stated that different social and professional groups can be expected, who would honour their presence by visiting different areas of the Forest. This opinion was most frequently justified by the possibility of safe movement and improved aesthetics of the examined area.

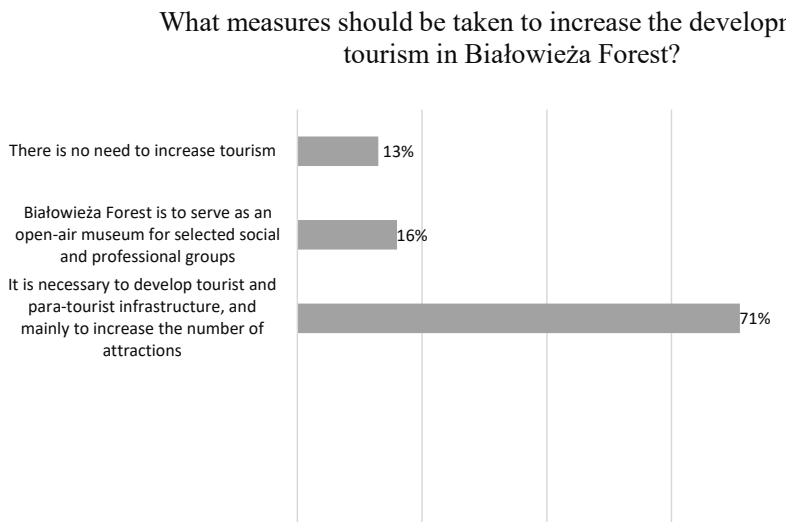


Figure 6. The possibilities of increasing tourist traffic in the area of Białowieża Forest

Source: own study based on the research results.

In conclusion, the respondents stated that the area of Białowieża Forest is to serve the society in such a way that it is possible to cultivate various types and forms of tourism there and to collect undergrowth, and propose to designate a specific area for research, as stated by 71% of the respondents. The respondents suggested that forest areas should serve people, and not be a “picture or postcard” for life, which one looks at and it has no benefit at all.

In order to increase the development of tourism in Białowieża Forest, the respondents suggested that a necessary element is a construction and development of tourism and para-tourist infrastructure which according to the respondents is very modest (fig. 6).

It has been emphasized many times that values and attractions mainly attract tourists and where they occur tourism is developing. Bearing in mind Białowieża Forest, the local authorities should be mainly involved, which should contribute to the aforementioned construction and development of tourist and para-tourist infrastructure. Some respondents (18%) suggested building a bicycle path from Hajnówka to Białowieża where tourists could admire the beauty of nature. In the area of Białowieża Forest, there are the remnants of the narrow-gauge railway which was used to transport wood in the enterprise in Hajnówka that no longer exists and this is also the way to use the material potential in the development of tourist traffic.

Only 13% of the respondents believe that there is no need to develop tourism in Białowieża Forest, and the area is to serve only specific social and professional groups (enthusiasts of flora and fauna, and researchers). The majority of the respondents (71%) believe, however, that tourism should develop, and that local authorities must take care of the construction and development of tourist and para-touristic infrastructure (cycling paths, footpaths, educational paths, car parks, shelters, observation towers, grocery stores, bars, hairdressers, beauty parlors and others). First of all, the number of tourist attractions should be increased because they attract tourists.

Conclusions

A significant element attracting tourists to Białowieża and Białowieża Forest is nature, landscape and cultural values, and mainly uncontaminated environment. The results of the research showed that in the area of Białowieża Forest a big obstacle are dry spruce trees attacked by the spruce bark beetle, which distort the landscape and pose a danger during travels and walks in the forest area (Kershaw, 2016, p. 21).

Tourists should feel safe while dry spruces are a threat to visitors. The construction and development of tourist and para-tourist infrastructure should also be pursued, according to 79% of the students and local government employees surveyed.

Only tourist attractions are a guarantee of increased tourist demand among the society. For tourism to develop dynamically, the area of Białowieża Forest must be safe and orderly in terms of aesthetics. A specific area should be designated for the research, and the remaining part should be devoted to the development of tourism, which will contribute to the improvement of the budget of the county and commune (Jalinik, 2016, pp. 316–317).

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OCENA MOŻLIWOŚCI ROZWOJU TURYSTYKI W PUSZCZY BIAŁOWIESKIEJ PO GRADACJI KORNICA DRUKARZA

SŁOWA KLUCZOWE

Białowieża Forest, forestareas, touristtraffic, tourism

STRESZCZENIE

Rozwój turystyki uzależniony jest w znacznym stopniu od środowiska przyrodniczego, ale i przyroda zależy od ruchu turystycznego. Obszar Puszczy Białowieskiej po gradacji kornika w znacznym stopniu zmienił swój wygląd. Dlatego też postanowiono przeprowadzić badania wśród studentów studiów stacjonarnych i niestacjonarnych Zamiejscowego Wydziału Leśnego Politechniki Białostockiej w Hajnówce, jako przyszłych pracowników obszarów leśnych i pracowników samorządów lokalnych na temat ich opinii o drzewostanie świerkowym i dalszych działaniach w zakresie rozwoju turystyki w Puszczy Białowieskiej. Badania dotyczyły dwóch wątków, czy turystyka będzie intensywniej się rozwijała po pozostawieniu drzew skażonych, czy po ich wycięciu. W badaniach wykorzystano metodę sondażu diagnostycznego i adekwatnie do wymienionej metody wykorzystano technikę ankiety w postaci kwestionariusza ankiety.