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CAUSES OF VARIATIONS IN THE SCALE OF TOURISM IN POLISH NATIONAL PARKS

Abstract: National parks are among the most frequently visited tourist places in Poland. Every year, millions of tourists travel to spend time there and their number is constantly rising. National parks take nearly 30% of all domestic tourism. However, the number of people visiting individual national parks strongly varies. Some parks are visited by millions, others by only several thousand. The article is an attempt to indicate the main causes of the varying number of tourists visiting national parks. By analysing individual features of tourism in specific national parks, especially in those where the differences are most visible, the author attempts to distinguish aspects which may explain this phenomenon.

Keywords: national park, tourism, differences.

1. INTRODUCTION

Protected areas, including national parks, attract crowds of tourists due to the fact that the natural environment of these places has not been transformed too strongly yet and it has exceptional natural and human assets. Because of their particular character, such areas enable various forms of tourism and recreation to be practiced, as they offer environmental assets which cannot be found elsewhere. In the early days of tourism, naturally valuable regions were the foundation for the development of different forms: recreational, medicinal, specialised and sightseeing. With time, as tourism was growing, so were the number of people visiting naturally valuable areas. In the 19th century, this reached a level where the need to protect these areas had become an issue. Nature preservation ideas first appeared in the mid-19th century (Walas, 2019). Initially, the need for a new approach was the result of the growing human impact on the environment through the development of industry, transport and agriculture. However, the increasing number of people (researchers, tourists, as well as foragers, poachers, etc.) staying in naturally valuable areas led to the setting up of institutions which dealt with the organization of tourism and acted for the benefit of environmental protection (e.g. the Tatra Society, established in 1873). The 20th century, especially the period after World War II, was a time when tourism became a global phenomenon. After the first protection institutions appeared as early as the mid-19th century, the mass character of tourism in the second half of the 20th century boosted the development of similar organizations, including in Poland. The first Polish national park was created in 1932, and followed by another 13 in the next half of the century. Currently, there are 23 national parks and another 10 are being planned, including Turnica, Mazury and Jurassic National Parks (Partyka, 2010a).

Despite the fact that the total area of national parks in Poland takes up slightly over 1% of the overall area of the country, their unique character compared to other areas makes them places which are most frequently visited by tourists. According to the Central Statistical Office, in 2017, Polish national parks were visited by over 13 million people. In many national parks, tourism is becoming a mass-scale phenomenon, which in conjunction with the low level of tourist education and their poor ecological awareness, may have a negative impact. That is why an increasing number of these institutions are running environmental and ecological education classes.

The problems of tourism in national parks are the subject of many studies, and tourism has been presented

from different perspectives. In their description of tourism, Liszewski (2009) and Partyka (2010a) refer to the areas of all parks. Liszewski classified parks into four categories by the intensity with which they were used for tourist purposes. Following this, it was possible to identify the type of tourism space for each park which, in turn, can be useful in research on the tourism function of national parks. Partyka described national parks, conducted an analysis of tourism and presented the scale of tourist infrastructure for each park. Comprehensive collective analyses were also made by Smoleński (2006) who divided them with regard to size, location and accessibility by transport. Many academic papers related to tourism in national parks discuss ecological issues and the problems of making them available to tourists and the results of this policy (Partyka, 2002, 2010b). Gałązka (2009) presents the results of research on tourists' opinions of sustainable tourism, and Mazurczak (2009) discusses the execution of ecological and sustainable tourism assumptions in the Warta River National Park. Researchers devote a lot of time to discussing negative effects of tourism in national parks, with regard to the development of the tourist function (Fidelus, 2008; Głuchowski, Nawrocka-Grześkowiak, 2013; Stasiak, 1997). Tourism in national parks in relation to the development of the tourist function was analysed by Włodarczyk (1993) and Krakowiak (2000). In the author's opinion, most papers have presented analyses of tourism conducted for individual national parks and works that should be mentioned include papers written by Dzioban (2013), Hibner (2013), Prędki (2015), Rogowski (2018), Semczuk (2012) or Wieniawska-Raj (2007). The analyses are conducted in different ways and regard different aspects of tourism. Their authors discuss its scale, seasonality, present places of greatest concentration, and discuss problems related to tourism developing in a given park. Many papers have been based on field studies and measurements of the scale of tourism taken by the authors. They provide details about those who visit the parks, such as by gender, education, place of birth, motivation, preferred forms of tourism, etc. This data enables researchers to present the profile of the visitor to the park.

In the author's opinion, despite the huge variety of research papers, there is a shortage of publications which touch on the problem of disproportion in the scale of tourism. The difference between the number of tourists in the park which is visited most often and in one that is visited least is enormous and measured in millions. The author attempted to identify the main causes of the varying numbers by doing desk research on the available literature presenting tourism in individual parks. In the course of the analysis, the author focused on the features of a national park which can have an influence on the number of visitors and their fluctuations. The other method was an analysis of the statistical data published by the Central Statistical Office. The most significant were presented in the form of tables or graphs. The analysis of accessibility was based on Geoportal (2019) and Google Maps (2019). The outcome of the study is a general description of tourism in Polish national parks, with particular attention being paid to the factors which may have an influence on the differences in the scale of tourism.

2. MONITORING THE SCALE OF TOURISM

Every year, numbers visiting national parks grows. In some parks this increase occurs rapidly while in other ones – more slowly. Considering the fact that the parks are areas of unique environmental value, their most important function as institutions should be the protection of nature. However, the Nature Preservation Act of 16th April 2004 obliges park administrators to make these areas available for various purposes. Proper tourism management is required, so that impact on the environment is minimal. Thus, there is a need for precise data regarding tourism, such as who visited the park, where they arrived from, from which side, when and how they entered the park, what they were doing there, how much time they spent there, etc. This information will enable administrators to manage tourism in an optimal and rational way so that it does not harm the environment, an extremely important, but also very difficult issue. One way to learn about tourism in a given national park is monitoring. However, not in all parks is collecting such data easy and in some it is even impossible. Every park records and monitors its environmental resources. In order to function properly, it also needs information regarding tourism, so monitoring is essential (Graja-Zwolińska, Spychała, 2014; Kruczek, Przybylo-Kisielewska, 2019). Kajala (2007) lists the following methods of measuring tourism:

- **indirect**, i.e. counting tourists based on signing out, ticket sales, issued permits or other forms of registration,
- **direct**, i.e. counting tourists, e.g. on the trail, observation from the air,
- **automatic**, i.e. using measurement tools.

Although there are various methods of measurement, many national parks have problems obtaining reliable and accurate data regarding tourism. The most popular method used by park employees is an estimation of the scale and intensity of tourism based on the number of admission tickets to the park itself, the attractions on its premises or educational paths (Spychała, Graja-Zwolińska, 2014). However, in some parks, it proves to be an ineffective method. According to Lawin (2000), counting tourists in this way is impossible in Magura National Park, as it does not sell any tickets. Dzioban

(2013) points to the difficulties involved in monitoring tourism in this way in Kampinos National Park, which is in practice open and accessible on all sides. Moreover, the number of tickets sold does not give the full picture of tourism, because in a given park, they may be sold only for a particular attraction or only at a few places, while tourists walk around the whole area. Jastrzębski (2009) points to the disadvantages of using this method in Świętokrzyski National Park which keeps records of tickets for specific places, e.g. the Holy Cross Mountain. However, it can be accessed from several other places and the people who use these entrances are not counted in any way.

Another method for monitoring tourism is to 'count' tourists by means of a questionnaire where they are asked questions about their motivations and preferences as regards the choice of destination. Such a method, which goes beyond quantitative data, makes it possible to create a profile of the tourist who visits a given park. This kind of research is done in many national parks, e.g. in Babia Góra, Gorce, Tatra, Karkonosze or Stołowe Mountains. In recent years, other parks have systematically implemented this method. Measurements are often taken not only by park employees, but also by field researchers and volunteers. The method however is time-consuming and costly. Preparing a proper questionnaire takes up a lot of time, likewise collecting data and analysing it later. Measurements must be made regularly which entails finding an appropriate number of respondents. Apart from counting tourists, vehicles are also monitored; counted and their registration numbers written down in order to know which regions the tourists arrive from.

The most effective method seems to be the use of electronic measuring equipment. This method is used in 14 parks which use the eco-counter system by Amreco, consisting of pyroelectric sensors, movement detectors and other devices which detect vibrations and count passing tourists with the help of infrared rays. This method has many advantages: it does not require additional staff to take measurements, and it is fast and easy to manage. Nevertheless, it is not without faults. Due to its technological advancement, such a device is very expensive. Furthermore, sensors sometimes get damaged or stolen and there are frequent mistakes in measurements. Buchwał and Fidelus (2010) and Hibner (2014) point to measurement errors in these devices while monitoring tourism in Tatra National Park. The device may not recognize two tourists walking side by side and count them as one person. When the trail is overloaded, the system ignores some people, treats the legs of the tall as two people, does not register short people or counts animals. Problems also appear when the sensor is improperly set. Despite many problems with the sensors, more and more parks have decided to use this method in recent years. As indicated by Rogowski (2018), this system has made it possible to acquire credible data for Stołowe Mountains National Park, especially information about trail load or the popularity of attractions and various areas. New ways have been developed to eliminate mistakes occurring in sensor measurements. For instance, in Tatra National Park, an employee or voluntary worker stays near the sensor and counts the tourists; then the data is compared with the information provided by the sensor. Depending on the gravity of the error, the sensor's settings are adjusted and the test is repeated, until the data from the two sources is more or less the same. Despite its drawbacks, the method seems to be the most effective. Sensors can be installed in many places in the park and data may be collected from a vast area.

Although the method has its weaknesses, monitoring tourism in national parks is a major issue. It makes it possible to estimate the number of tourists, define the most crowded places, the points where tourists enter the parks and obtain other data. All this information supports proper tourism management.

3. THE SCALE OF TOURISM IN NATIONAL PARKS

This part of the article presents selected quantitative data regarding national parks. The data comes from a Central Statistical Office report, "Nature Preservation 2018" (*Ochrona Środowiska 2008*, 2008, *Ochrona Środowiska 2018*, 2018). The author also prepared his own analyses, which he believes will allow him to present the causes of differences in the numbers of tourists visiting individual national parks.

3.1. THE SCALE OF TOURIST TRAFFIC IN POLISH NATIONAL PARKS

The map (Fig. 1) presents the distribution of national parks in Poland, and the graph (Fig. 2) the scale of tourism in 2007 and 2017. It can be found that in the majority of national parks, the number of tourists increased over the decade in question, while in several others (Wolin, Karkonosze, Wielkopolska, Magura, Kampinos) it did not change. In the author's opinion, these figures are not accurate, due to the lack of exact data regarding tourism and the data is only approximate and flawed. These parks have problems with monitoring the scale of tourism because they can be entered from many points, admission tickets are not sold or measuring of the scale is for some reasons impossible. Looking at the generally increasing trends, these parks are currently visited by more tourists. There are also parks where the number

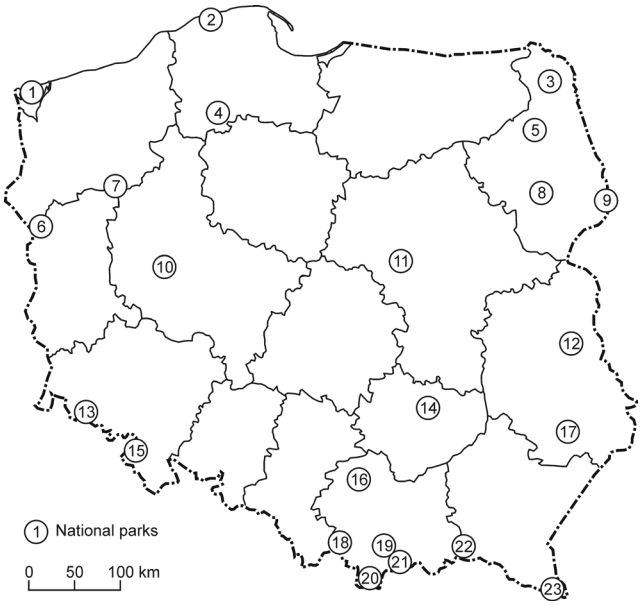

Figure 1. National parks in Poland. 1 – Wolin, 2 – Słowiński, 3 – Wigry, 4 – Tuchola Forest, 5 – Biebrza, 6 – Warta River, 7 – Drawno, 8 – Narew, 9 – Białowieża, 10 – Wielkopolska, 11 – Kampinos, 12 – Polesie, 13 – Karkonosze, 14 – Świętokrzyski, 15 – Stołowe Mountains, 16 – Ojców, 17 – Roztocze, 18 – Babia Góra, 19 – Gorce, 20 – Tatra, 21 – Pieniny, 22 – Magura, 23 – Bieszczady
Source: author

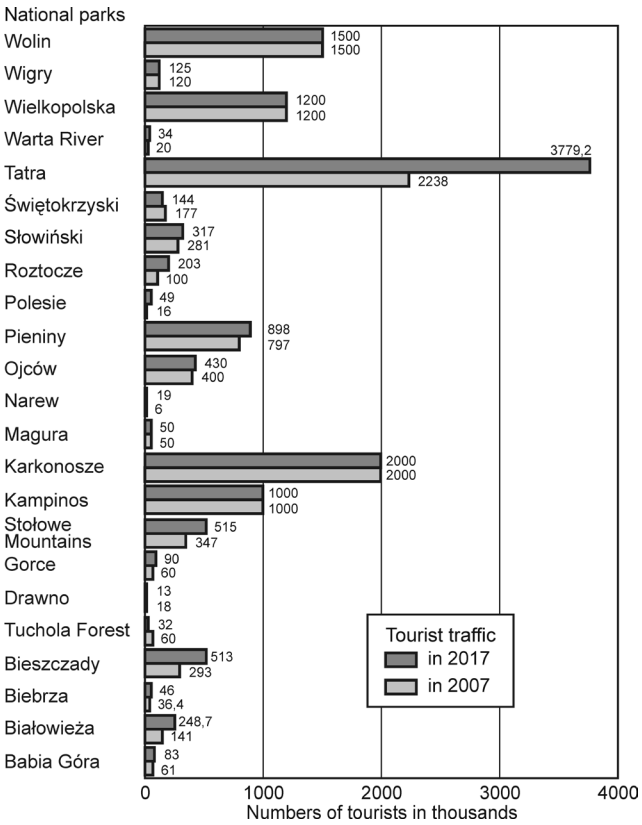

Figure 2. Tourism in 2007 and 2017
Source: author, based on Central Statistical Office data

of tourists was reported to have fallen: Tuchola Forest, Drawno and Świętokrzyski.

When analysing the spatial distribution of national parks and the scale of tourism, we may notice that the parks with the largest numbers of tourists are situated in regions which are most willingly chosen as tourist destinations, i.e. the seaside, lake districts and mountain areas. Parks which are chosen less frequently represent forest areas and wetlands. On the other hand, the group of parks visited least frequently includes those situated in mountain areas, though they are visited by the largest number of people. This situation shows that there are factors which diversify tourism in mountain national parks, and that geographical location is only one of them.

In order to find other causes of the differing numbers visiting national parks, the author compared the number of tourists with the number of years that a given park has been functioning (Fig. 3). The pyramid shows that there is a group of parks whose time of existence may have an influence on the number of tourists visiting. The most popular have been functioning for over 60 years. Perhaps over such a long period, they have developed an effective method of tourism management, won tourists' appreciation, and have been properly prepared to organize tourist activity in their area. Giving a space the status of a national park makes it more valuable and attractive to tourists. Therefore, it can be assumed that the longer a given park exists, the more unique its assets appear to be. The upper part of the pyramid (Fig. 3) shows that the shorter a given park has existed, the fewer those who visit it. Perhaps, its resources have not been recognized by tourists yet, or the park itself has not been properly prepared as regards tourism, which may also be attributed to the fact that the superior objective of national parks is nature protection. It may also have not developed a suitable level of awareness, contrary to the most popular parks. A longer period of activity has let the most popular parks develop appropriate strategies of tourism management and prepare a product and educational campaigns, which might help to gain more appreciation among tourists. However, a number of parks do not comply with these assumptions. Stołowe Mountains National Park, which is relatively new, compared to others, is visited by several hundred thousand more tourists than, e.g. Białowieża or Świętokrzyski, which are over 60 years older. According to Rogowski (2017), the area in question features unique assets, due to which it has been classified as an area of major importance for recreational tourism. In addition to this, the greater number of tourists may result from the very location of Stołowe Mountains National Park, because it is situated close to popular tourist and spa destinations: Duszniki-Zdrój, Polanica-Zdrój; as well as larger towns, such as

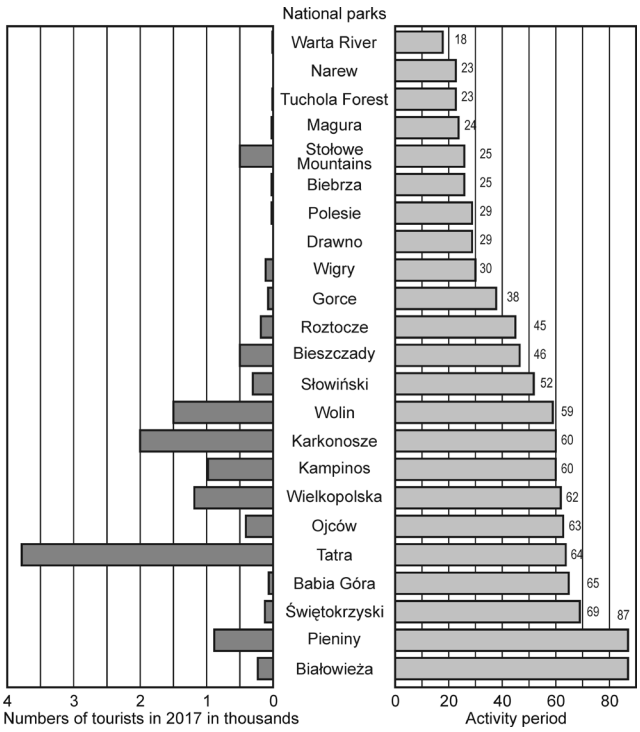

Figure 3. Graph of the numbers of tourists and the activity period of national parks
Source: author

Kłodzko. Babia Góra and Białowieża National Parks are situated much further from major destinations and feature fewer tourist trails. Świętokrzyski National Park is visited by large numbers of excursionists, organized groups and pilgrims. Despite good access to the park by transport and the fact that it is located close to Kielce, it can be assumed that its advantages have a regional range and are directed towards specific groups of visitors.

3.2. ACCESSIBILITY BY TRANSPORT

The next stage in the analysis was the study of access to each national park. Similar research was conducted by Smoleński (2006) who divided parks with regard to their accessibility into 'easily accessible', 'difficult to reach by transport' and 'hard to access'. He also divided them with regard to the length of the tourist season. Using the Geoportal and Google Maps tools, the author conducted an analysis of accessibility by transport in the following ways: he estimated the distance from a major destination and checked the accessibility of roads and other means of transport that can be used to reach individual parks (Table 1). The criterion was a distance not longer than 25 km, because at the present stage in the development of the transportation network, this distance can be covered in about half an hour, depending on the means of transport. The author also analysed the distance of the national park from an urban conurbation (Fig. 4), as well as the number of conurbations within a radius of 100 km (Fig. 5). The isopleths were set at every 25 km which can also allow the time needed to reach the park to be estimated, assuming that this distance can be covered in half an hour (100 km → about 2 hours). However, the access time will be different for each park, due to the varying transport infrastructure (e.g. motorways and dual carriageways close to the park will substantially shorten

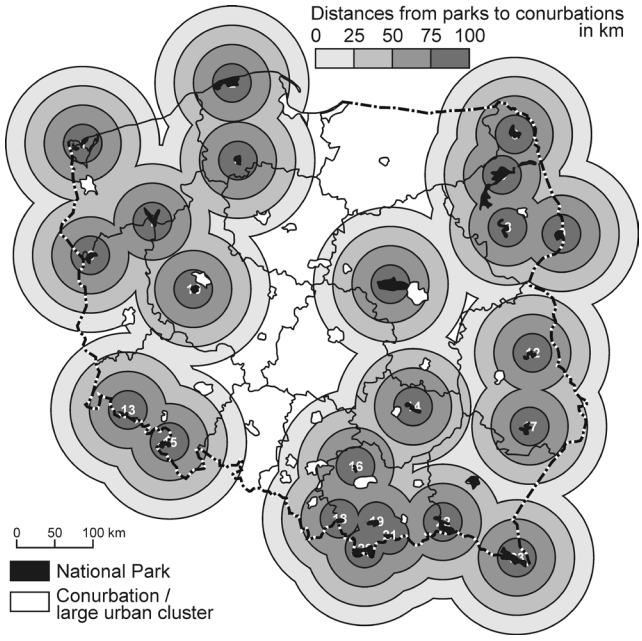

Figure 4. Distances from parks to conurbations
Source: author

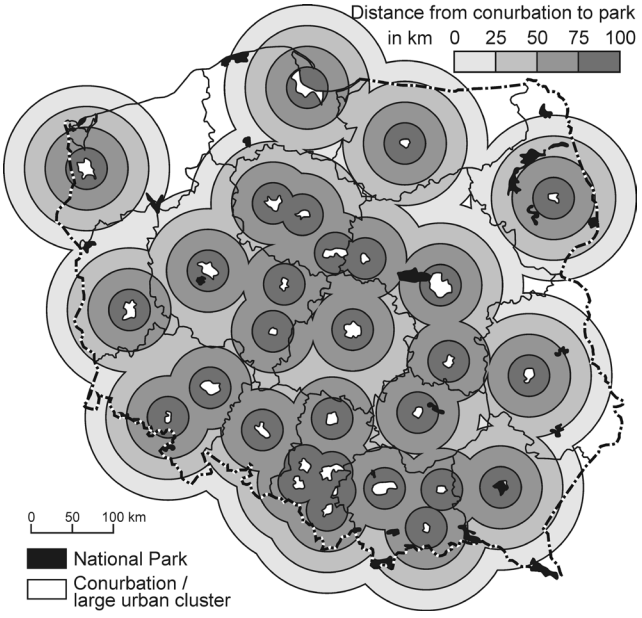

Figure 5. Distances from conurbations to national parks
Source: author

Table 1. Access by transport to national parks

National Park	Occurrence within a distance of 25 km from the park boundaries							Conurbation within 50 km	Total
	motorway node	national road	provincial road	railway station	public transport	nodal town up to 10 000 inhabitants	nodal town over 10 000 inhabitants		
Babia Góra			×		×	×		×	4
Białowieża			×	×	×	×	×		5
Biebrza		×	×	×	×	×	×	×	7
Bieszczady			×		×	×			3
Tuchola Forest		×	×	×	×	×	×		6
Drawno		×		×	×	×			4
Gorce			×	×	×	×	×	×	6
Gór Stołowych		×	×	×	×	×	×	×	7
Kampinos	×	×	×	×	×	×	×	×	8
Karkonosze		×	×	×	×	×	×	×	7
Magura		×	×		×	×		×	5
Narew	×	×	×	×	×	×	×	×	8
Ojców		×	×		×	×	×	×	6
Pieniny			×		×	×	×	×	5
Polesie		×	×		×	×			4
Roztocze		×	×	×	×	×			5
Słowiński		×	×	×	×	×			5
Świętokrzyski		×	×		×	×	×	×	6
Tatra		×	×	×	×	×	×		6
Warta		×	×	×	×	×	×		6
Wielkopolska	×	×	×	×	×	×	×	×	8
Wigry	×	×	×	×	×	×	×		7
Wolin		×	×	×	×	×	×		6
Total	4	18	22	16	23	23	16	12	

Source: author.

the journey). In the case of conurbations, the criterion for their occurrence near a park was 50 km. Covering this distance should not take more than one hour, which in the case of many parks may have a great influence on the frequency of visits and the character of tourism. The analysis encompassed the 27 conurbations in Poland listed by Klimska and Swianiewicz (2005). The parks situated closest to conurbations include Kampinos, Wielkopolska, Świętokrzyski and Ojców National Parks. Eight parks are located no further than 50 km from a large city while every park is located no more than 75 km away. However, the closer it is from a city to a park, the larger the number of tourists who visit it. A close proximity of a conurbation makes reaching a national park by different means of transport much easier. Moreover, a large city may influence the tourist infrastructure of a park.

As shown on the map of distances from conurbations to national parks (Fig. 5), no larger city lies farther than 75 km from the four parks which record the smallest numbers of visiting tourists: Tuchola Forest, Drawno, Polesie and Warta River National Parks.

A similar peripheral location is found in the case of Bieszczady, Słowiński and Wigry, but their situation is slightly different. Firstly, these three parks are visited by a considerably larger number of tourists than the parks mentioned earlier. Secondly may be the fact that they are parks with assets which tourists may consider to be more attractive. Słowiński and Wigry National Parks are located near fairly large towns with a strongly developed tourist function (Łeba, Suwałki) but which are not classified as conurbations. Despite the fact that Bieszczadzki National Park is not situated close to large cities and it is more difficult to reach than other parks, it is surrounded with several destinations with a well developed tourist function, and its landscape assets are appreciated by tourists. In addition, reaching it is much easier due to the A4 motorway node.

Only eight urban conurbations have a national park within a distance of 50 km. Three cities, Olsztyn, Opole and Toruń, are located further than 100 km from a park. Two – Nowy Sącz and Białystok – are surrounded by national parks, with three located within a distance of 50 km. In the case of Nowy Sącz, we may easily include Tatra National Park, which despite being located further than 50 km away, can be reached in not more than two hours. It is obvious then that the distance from a park to a conurbation and its access time are often of primary importance, e.g. in the case of parks situated directly next to a large urban cluster where the inhabitants constitute the majority of visitors. There are also cases where the location close to a conurbation or a lack of an urban centre is not that important (e.g. parks situated on wetlands or in river valleys). In the author's opinion, in many cases, what is more important than a location close to an urban conurbation is the existence of well-known places with a strongly developed tourist function close to the park. Such destinations are the tourist back-up of the park and they are very often small towns or villages.

The materials presented above show that the accessibility of national parks by transport has a considerable influence on the number of visitors. As a rule, it may seem that all parks can be easily accessed and are located near a nodal destination. However, there are substantial differences between them. The national parks which are visited by many tourists are usually situated close to a town or conurbation. They are often destinations with a strongly developed tourism function, as in the case of Karkonosze, Tatra or Wolin National Parks. Some parks are strongly impacted by the presence of a large urban conurbation nearby, which not only provides the tourist back-up, but also has a significant influence on the distribution of tourists. Kampinos or Wielkopolska National Parks are typical parks which serve the inhabitants of nearby cities as recreational areas. Access from large cities significantly facilitates reaching a park. Drawno National Park is located furthest from any town, it can be reached by a national road, but getting there by other means of transport is difficult. The lack of a nodal destination nearby makes staying near the park more difficult too. The tourist is forced to travel a long distance and take a lot of time to get there. The situation is similar as regards Babia Góra and Gorce National Parks. They are also located quite far from nodal destinations and reaching them is time-consuming. Perhaps this is why the number of tourists visiting them is very different than in other mountain parks. It is worth noting, however, that tourists can access these parks via route 47, the popular 'Zakopianka', parts of which have been changed to a dual carriageway in recent years, in order to make travelling more efficient and easier.

3.3. TOURISM INFRASTRUCTURE

In accordance with the Nature Preservation Act (2004), tourism in national parks may take place on tourist trails. As a result, tourism in a national park is distributed linearly. However, designated trails alone are not enough. In order to provide appropriate services to tourists, special amenities and tourist infrastructure are installed and built, e.g. hostels, shelters, canopies, ski-lifts, etc. Below, the author presents the length of tourist trails in kilometres for each park (Fig. 6) and the number of selected elements of tourist infrastructure (Table 2). The length of tourist trails depends mostly on its shape, land relief and the type of protected natural resources. Therefore, a large number of trails can be found in mountain parks which have attractive landscape assets, located in various parts of the park. The trails are designated in order to make these assets accessible to tourists with minimal interference with the environment. Trails in mountain areas are distributed unevenly, forming irregular networks and at the same time making diversions from the most precious natural sites. A large number of tourist trails are found in lowland parks situated near large cities. They serve their inhabitants with easily accessible recreation areas used for short visits. Relatively many trails run through parks located in lake districts, wetlands and river valleys.

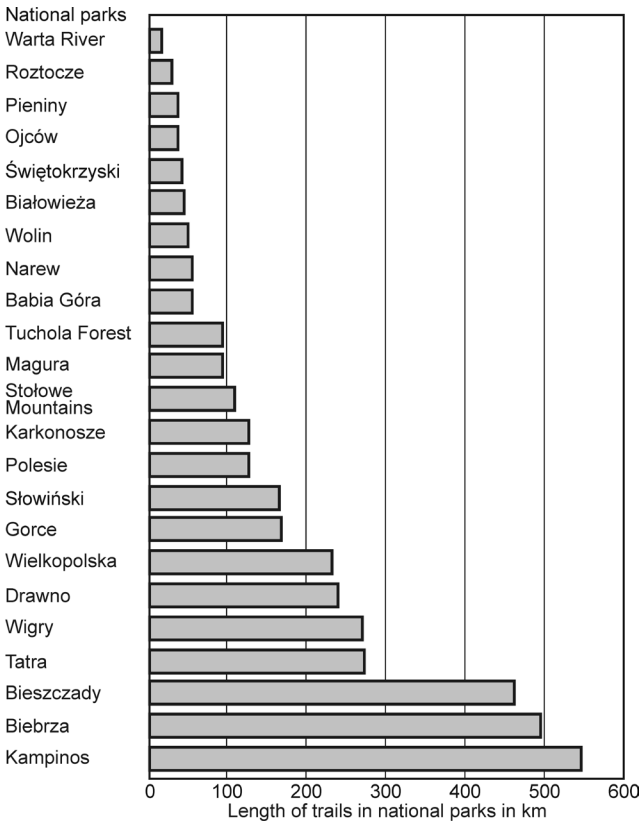

Figure 6. Length of trails in national parks
Source: author, based on Central Statistical Office data

Table 2. Number of selected elements of tourist infrastructure

National park	Tourist hostels	Holiday resorts	Camp sites	Shelters	Ski routes in km	Cable cars	Ski lifts	Competitive trails
Babia Góra	1	0	1	14	6,0	0	0	0
Białowieża	0	1	0	0	0,0	0	0	0
Biebrza	0	0	3	31	0,0	0	0	0
Bieszczady	3	0	3	19	0,0	0	0	0
Tuchola Forest	0	0	0	0	0,0	0	0	0
Drawno	0	0	6	1	0,0	0	0	0
Gorce	0	0	2	3	0,3	0	0	0
Stołowe Mountains	2	3	0	13	34,0	0	0	0
Kampinos	1	0	0	87	0,0	0	0	0
Karkonosze	10	0	0	3	14,7	4	9	0
Magura	0	0	0	13	0,0	0	0	0
Narew	0	0	2	0	0,0	0	0	0
Ojców	0	0	1	1	0,0	0	0	0
Pieniny	0	0	0	3	0,0	0	0	0
Polesie	0	0	4	27	0,0	0	0	0
Roztocze	0	0	0	7	0,0	0	0	0
Słowiński	0	0	0	37	0,0	0	0	0
Świętokrzyski	2	0	1	4	0,0	0	0	0
Tatra	8	0	2	0	24,8	7	3	3
Warty	0	0	0	0	0,0	0	0	0
Wielkopolska	0	0	1	20	0,0	0	0	0
Wigry	0	5	4	92	15,3	0	0	0
Wolin	0	0	0	10	0,0	0	0	0

Source: author, based on Central Statistical Office data.

A sizable number of trails are designated along forest paths, with water trails being counted as well to calculate the overall trail length (Stasiak, Śledzińska, Włodarczyk, 2014).

Some parks with the highest tourist visitor rate also offer the largest number of trails. However, there are parks which are visited by many people but the trail distances are short, and the reverse, parks where there are many tourist trails but they are frequented by a small number of tourists, e.g. Biebrza National Park. An explanation can be provided by the analysis of a different type of tourism infrastructure. As shown, in Biebrza National Park, there are rain shelters and camp sites. However, also the majority of parks with shorter tourist trails do not have too many other elements of tourist infrastructure. It is worth noting that mountain national parks clearly stand out as regards infrastructure.

It can be said then that the cause of this situation is the geographical location of the park. Mountain areas make it various forms of sport and tourism possible, such as skiing or climbing, so there is a need for an appropriate infrastructure to provide an appropriate standard of service. There is a similar situation in Wigry National Park which also has a varied tourism infrastructure related to different forms of water tourism.

3.4. TOURISM SEASONALITY

The next step was an analysis of tourism seasonality for four national parks representing different geographical regions, which enabled the author to identify the features of tourism characteristic of a given group of parks. The graphs (Fig. 7) present seasonality indices for four national parks: Tatra, Wigry, Biebrza and Tuchola Forest. The red line marks values above 100% (mean value from 12 months), which show the boundaries of tourist seasons. The common feature of all parks in question is that during the holiday months, they display very high index values, which is typical for Poland. The seasonality of tourism depends mainly on the climatic conditions and the weather throughout the year. The most favourable conditions for tourism occur during the holiday months and include high temperatures,

high exposure to sunlight and day length. Besides, it is a time when many people do not work and go on a summer holiday (Błażejczyk, Kunert, 2011; Koźmiński, Michalska, 2016). However, the indices also indicate features characteristic of individual parks.

In Tatra National Park (Fig. 7), there are in fact two seasons: during the winter months (January, February), i.e. during the skiing season, and in the summer, at the peak of the holiday season. May, June and September are when the Tatras are visited by school groups, while in the autumn – the high index values are maintained due to visits by students and those who want to avoid the summer crowds. It is worth adding here that even during the summer there may be few people present in the park. Tourism in the mountains depends, above all, on weather conditions. The Tatra National Park stands out from others as regards the scale of tourism. Its exceptional landscape and climatic assets, well-prepared tourism infrastructure, the possibility to engage in many forms of tourism, as well as the symbolism of these mountains, e.g. Giewont, make this park one of the most frequently visited areas of Poland (Buchała, Fidelus, 2010).

In Wigry National Park (Fig. 7), the tourist season shows features similar to those of Tatra National Park, but here the advantage of the spring months is clearly visible. The high season comes between May and August. The park is an area where different forms of water tourism are found (sailing, kayaking). It is also visited by large numbers of people during, the so-called 'long weekends' (May). The summer months are traditionally the peak of the season, due to the most favourable weather conditions (Czarnecki, 2009).

In Biebrza National Park (Fig. 7), the tourist season occurs differently than in the parks described earlier. The high season comes in April and May, while a secondary season is found in the summer holiday months. It is worth remembering that the park represents wetlands which are the habitat of many rare bird species. Consequently, Biebrza National Park was taken under protection in 1995, within the framework of the Ramsar Convention.

The majority of people visiting this national park most arrive in April when birds start their breeding season. During the holiday period, those who enjoy water tourism (kayaking) and cycling appear. As Bałtyk (2012) writes, Biebrza National Park has significantly developed its tourism infrastructure. The existing trails have been improved and new ones have been designated, shelters, waterside hostels and water sport equipment rental points have been built. As a result, the tourism season has been extended and the number of tourists has increased in recent years.

The peak season in Tuchola Forest National Park (Fig. 7) is the summer holiday period, with a number of characteristic features. A secondary season, like the one discussed earlier, does not occur. The attractiveness of this park lies mostly in its special natural assets and the types of tourism include hiking, cycling, horse-riding and water sports. Spring months (April–June) are the time of school and organized group excursions while summer months are when individual tourists arrive. The park is located close to tourist destinations (Charzykowy, Swornegacie) (Szyda, Sokołowski, 2013). Other national parks, whose monthly statistics have not been presented here (problems with monitoring) also

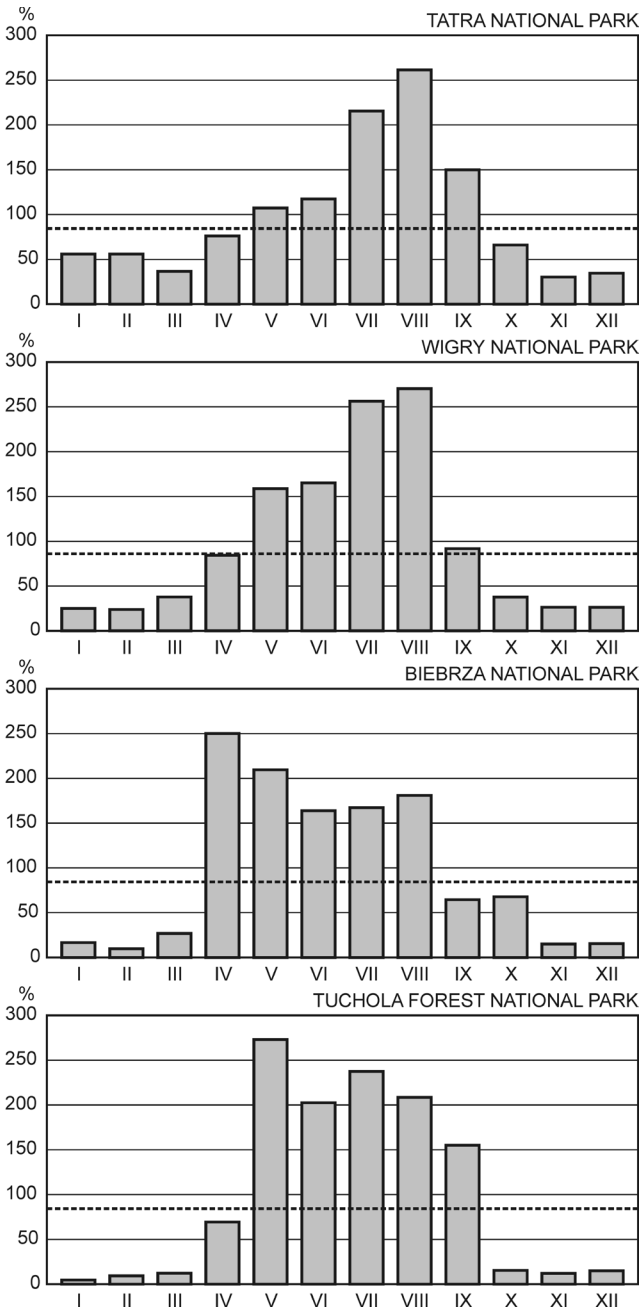

Figure 7. Seasonality indices in selected national parks: Tatra, Wigry, Biebrza, Tuchola Forest
Source: author, based on data provided by the national parks

display some similarities as regards tourism. A similar distribution is found in parks located close to large urban conurbations (Kampinos, Ojców, Wielkopolska). Kampinos National Park is a tourist-recreational area for the inhabitants of Warsaw and so tourism here is different than in the parks discussed before with the peak season in the spring (April–May). Many people treat Kampinos National Park as a 'suburban park'. High numbers of tourists have been found at weekends when city dwellers go on excursions outside the city. During the holiday months there is a strong decline in tourism as the majority of inhabitants travel in other directions (mountains, seaside, lakes) (Dzioban, 2013).

Seasonality is clearly visible in the parks situated on the coast: Słowiński and Wolin National Parks. Both display a strong tourism concentration in holiday months (July, August) mostly due to favourable climatic conditions (temperature, exposure to sunlight, length of day) and the holiday period. The strong concentration of tourism in the holiday season also results from the fact that both parks are located near large tourist destinations: Łeba (close to Słowiński National Park) and Świnoujście (close to Wolin National Park) and those spending their holidays in these places make day trips to these parks. Large numbers of tourists are also recorded in June and September when there are many organized trips; school excursions and for business and health. The smallest numbers arrive in winter and early spring (Dusza, 2013; Parzych, 2014).

Typical features of the scale of tourism can also be found in Bieszczady National Park. The peak season here is also in the holiday months, however the largest number of visits are recorded in August and September. The most visited trails lead to Polonina Wetlińska and to Tarnica from the Wołosate side, the most scenic areas of the park when the *połonina* takes on green and golden hues. In September – October, a strong domination of school, organized groups and student tourism is found (Prędki, 2015).

After analysing the variability of tourism in Polish national parks, it can be concluded that there are groups of parks where the course of the tourist season is similar. For instance, Warta River National Park displays a very similar pattern to Biebrza National Park (a small number of visitors, high season in spring months, low season in autumn and winter months, specific assets, floodplains, the visitors are mainly bird watchers and researchers) (Bałuchto, Chara, Fischbach, Florczak, Kraszewska, 2005). Parks near conurbations display heavy tourism in spring months, with the greatest drop in holiday months for the benefit of seaside, mountain and lake district parks, which record their maximum values. Some parks, such as Tatra National Park, have more than one season. The high season comes in the holiday months, but a period (intermediate season) when a park is also often visited, though not by such large numbers of tourists as during the high season, is also found. In many cases, its peak comes during the holiday time (school holidays, May holidays, winter break) or during Christmas or Easter. However, in parks located in wetlands, the course of the tourist season results from the qualities of the park and the kind of protected resources. The length of the season varies as well. In some parks, high attendance is maintained over several months, in others only during the summer holiday period, which may be due to the climate conditions which are best for visiting a given park in this particular period. It is obvious then that tourism seasonality in national parks is strong and varied in many respects, often resulting from the properties of the park itself.

4. CAUSES OF THE DIFFERENCES IN TOURISM IN NATIONAL PARKS

The analyses performed by the author point to multiple causes of tourism diversification in Polish national parks. One of the main determinants is the geographical location of a park, which gives it a unique character, distinguishes it from other parks or makes it less popular. This is because the character of an area and its advantages have a strong impact on local tourism.

The geographical location also has a direct effect on the accessibility of the park, e.g. access to nodal destinations or access by different means of transport. Easy access to the park will make it reachable by more people than is the case in peripherally located parks. Transport accessibility, then, may be one of the factors determining the tourist's choice. The possibility to engage in various forms of tourism and recreation depends on the location of the park, its assets and the conservation policy regime (dividing the parks into protection zones: strict, active and landscape). The properties of the natural environment enforce a type of area development which is not damaging while the national park chooses to implement a tourism strategy which is appropriate to its individual character. Only those forms of tourism are found which a given area allows and which will not cause much damage. The assets of a national park may be attractive to most people or only to enthusiasts or specialists (as it is the case of the Warta River National Park). In parks like Tatra, Karkonosze, Pieniny or Ojców, individual attractions or assets may draw huge numbers of tourists, although the park offers other places worth seeing as well. The trails to Giewont of Morskie Oko, Śnieżka, Trzy Korony or Hercules' Club are places of such symbolism and enormous significance

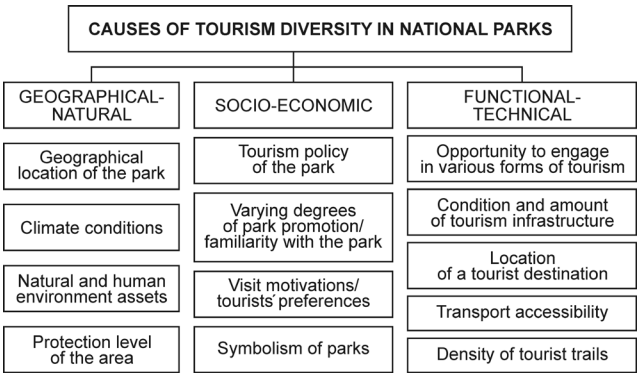

Figure 8. Causes of tourism diversity in national parks
Source: author

that they are often obligatory elements of tourist trips; tourists will not leave the park without visiting them. Thus, it is evident that there are many causes of tourism diversity in national parks (Fig. 8) arising largely from the character of individual parks, but also from other factors.

5. SUMMARY

The analyses of different aspects of tourism in Polish national parks show many differences which have an impact on the diversification of the number of tourists visiting these areas. However, a given diversifying feature does not have to appear in only one park. It is usually found in several which are similar in some respect or show a similar tourism distribution. The classification proposed is based on the analysis of various aspects of tourism in all national parks in Poland, Central Statistical Office data and geographical location. The most distinctive features determined assigning a given park to a specific group. Naturally, a park can be assigned to two groups at the same time, e.g. Słowiński National Park belongs to 'holiday parks' and 'excursion parks' at the same time, because the analysis of the scale of tourism there indicates that the high season comes during holiday months, but large numbers of tourists are also reported in the months when organized trips predominate. However, the classification was based on the assumption that it is necessary to consider the quality which is most visible in a given park rand, in the author's opinion, may significantly influence the distribution of tourism. Based on the analyses that were conducted, Polish national parks can be divided with regard to the following:

1. **The scale of tourism** – the classification was based on statistical data provided by the Central Statistical Office:
   – **parks with a large number of tourists** (over 1 million): Kampinos, Karkonosze, Wielkopolska, Wolin, Tatra;
   – **parks with a medium number of tourists** (100,000 to 1 million): Białowieża, Bieszczady, Stołowe Mountains, Ojców, Pieniny, Roztocze, Słowiński, Świętokrzyski, Wigry;
   – **parks with a small number of tourists** (up to 100,000): Babia Góra, Biebrza, Drawno, Gorce, Magura, Narew, Polesie, Tuchola Forest, Warta River.
2. **Geographical location (landscape zone):**
   – **coastal parks:** Słowiński, Wolin;
   – **parks in lake and forest areas:** Białowieża, Drawno, Kampinos, Roztocze, Tucholskie Forest, Wielkopolska, Wigry;
   – **parks in water areas and marshlands or in river valleys:** Biebrza, Narew, Polesie, Warta River;
   – **upland parks:** Ojców, Polesie;
   – **mountain parks:** Babia Góra, Bieszczady, Gorce, Karkonosze, Magura, Pieniny, Stołowe Mountains, Świętokrzyski.
3. **Accessibility by transport –** classification based on an earlier analysis of national parks accessibility, using Geoportal and Google Maps tools, as well as maps presenting distances between parks and urban conurbations:
   – **well-connected – peripheral:** Białowieża, Biebrza**,** Gorce, Karkonosze, Narew, Pieniny, Roztocze, Słowiński, Stołowe Mountains, Tatra, Tuchola Forest, Warta River, Wolin;
   – **poorly-connected – peripheral:** Babia Góra, Bieszczady, Drawno, Magura, Polesie, Wigry;
   – **well-connected – suburban:** Kampinos, Ojców, Świętokrzyski, Wielkopolska.
4. **Tourism seasonality** – classification based on analyses of the scale of tourism in national parks. The criteria were the months in which a given park was visited by the largest numbers of people and those which clearly indicated the tourist season. The multi-season parks were also classified according to their special assets, which in specific times of the year attract tourists to these parks:
   – **summer holidays** (the largest numbers of tourists in July and August): Słowiński, Wolin, Wigry, Karkonosze, Bieszczady, Pieniny, Gorce;
   – **excursions** (considerable numbers of tourists in May, June and September): Babia Góra, Białowieża, Drawno, Kampinos, Magura, Ojców, Stołowe Mountains, Świętokrzyski, Wielkopolska, Tuchola Forest;
   – **multi-seasonal:** Biebrza, Narew, Polesie, Roztocze, Tatra, Warta River.
5. **The possibility of engaging in various forms of tourism –** the classification was based on the figures provided by the Central Statistical Office (length of trails, tourism infrastructure), as well as various features of national parks which, in the author's opinion,

have an influence on opportunities for engaging in tourism in the park (geographical location, land relief and types of protected environment resources, the protection regime, protection and tourism policy of the park, types of tourist trails):

– **touristically multifunctional (more than 3 forms):** Babia Góra, Bieszczady, Gorce, Karkonosze, Pieniny, Stołowe Mountains, Tatra, Wigry, Wolin;
– **touristically poly-functional (2-3 forms):** Biebrza, Drawno, Kampinos, Magura, Roztocze, Tuchola Forest, Wielkopolska, Wigry, Wolin;
– **touristically mono-functional (one predominant form):** Białowieża, Narew, Ojców, Polesie, Słowiński, Świętokrzyski, Warta River.

Dividing and classifying national parks is strongly controversial due to the large number and great variety of features identified in these areas. The choice of criteria and groups into which the parks have been included was made in such a way that after identifying a given park in each group, they expressed its character most appropriately and indicated the most important features of tourism in its area.

REFERENCES

Bałuchto, B., Chara, P., Fischbach, K., Florczak, K., Kraszewska, A. (2005). Ruch turystyczny w Parku Narodowym Ujście Warty. In: R. Machowski, M. Rzętała (eds), *Z badań nad wpływem antropopresji na środowisko* (pp. 9-18). Sosnowiec: Uniwersytet Śląski.

Batyk, I. (2012). Zagospodarowanie turystyczne obszarów chronionych na przykładzie Biebrzańskiego Parku Narodowego. *Infrastruktura i Ekologia Terenów Wiejskich*, *2* (III), 207-216.

Biebrzański Park Narodowy (2019). Retrieved from: http://biebrza.org.pl (27.06.2019).

Błażejczyk, K., Kunert, A. (2011). *Bioklimatyczne uwarunkowania rekreacji i turystyki w Polsce*. Warszawa: PAN.

Buchwał, A., Fidelus, J. (2010). Monitoring ruchu turystycznego przy użyciu czujników ruchu na przykładzie Tatrzańskiego i Babiogórskiego Parku Narodowego. In: Z. Krzan (ed.), *Przyroda Tatrzańskiego Parku Narodowego a człowiek* (pp. 45-54). Zakopane: Wydawnictwo TPN.

Czarnecki, K. (2009). Atrakcyjność turystyczna i ruch turystyczny w parkach narodowych województwa podlaskiego. *Zeszyty naukowe SGGW*, *73*, 165-172.

Dusza, E. (2013). Zmienność natężenia ruchu turystycznego na obszarze Wolińskiego Parku Narodowego. *Problemy Ekologii Krajobrazu*, *XXXIV*, 275-279.

Dzioban, K. (2013). Wielkość ruchu turystycznego w Kampinoskim Parku Narodowym. *Studia i Materiały CEPL*, *15*, 90-96.

Fidelus, J. (2008). Rola ruchu turystycznego w przekształcaniu ścieżek i dróg turystycznych na obszarze Tatrzańskiego Parku Narodowego. *Prace Geograficzne*, *120*, 19-29.

Gałązka, M. (2009). Turystyka zrównoważona w parkach narodowych w opinii turystów. *Studia i Materiały CEPL*, *4*, 123-130.

Geoportal (2019). Retrieved from: http://geoportal.gov.pl (16.06.2019).

Głuchowski, R., Nawrocka-Grześkowiak, U. (2013). Skutki turystyki na terenach objętych ochroną na przykładzie Drawieńskiego Parku Narodowego. *Zarządzanie Ochroną Przyrody w Lasach*, *7*, 336-346.

Google Maps (2019). Retrieved from: http://maps.google.pl (24.06.2019).

Graja-Zwolińska, S., Spychała, A. (2014). Monitoring ruchu turystycznego w parkach narodowych. *Barometr Regionalny*, *12* (4), 171-177.

Hibner, J. (2013). Struktura ruchu turystycznego w polskich górskich parkach narodowych należących do sieci „Człowiek i Biosfera". In: P. Krąż, J. Hibner, J. Koj (eds), *Współczesne problemy i kierunki badawcze w geografii* (pp. 73-88). Kraków: Instytut Geografii i Gospodarki Przestrzennej UJ.

Hibner, J. (2014). Monitoring ruchu turystycznego w rejonie Kasprowego Wierchu – metody i problemy badawcze. *Współczesne Problemy i Kierunki Badawcze w Geografii*, *2*, 33-47.

Jastrzębski, C. (2009). Ruch turystyczny w Świętokrzyskim Parku Narodowym. *Studia i Materiały CEPL*, *4*, 199-205.

Kajala, L. (ed.) (2007). *Visitor monitoring in nature areas: A manual based on experiences from the Nordic and Baltic Countries*. Stockholm: Swedish Environmental Protection Agency.

Klimska, U., Swianiewicz, P. (2005). Społeczne i polityczne zróżnicowanie aglomeracji w Polsce – waniliowe centrum, mozaika przedmieść. *Prace i Studia Geograficzne*, *35*, 45-70.

Koźmiński, C., Michalska, B. (2016). Sezonowość i zmienność ruchu turystycznego w Polsce. *Zeszyty Naukowe Uniwersytetu Szczecińskiego*, *3*, 9-23. DOI: https://doi.org/10.18276/ept.2016.3.35-01

Krakowiak, B. (2000). Charakterystyka ruchu turystycznego w parkach narodowych Karpat Zachodnich – typy funkcjonalne parków. *Turyzm*, *1*, 5-37.

Kruczek, Z., Przybyło-Kisielewska, K. (2019). Ruch turystyczny w parkach narodowych i konsekwencje nadmiernej frekwencji odwiedzających. In: M. Nocoń, T. Pasierbek, J. Sobczuk, B. Walas (eds), *Parki narodowe i ich otoczenie społeczno-gospodarcze. Skazani na dialog* (pp. 160-171). Sucha Beskidzka: WSTiE.

Lawin, M. (2000). Ruch turystyczny w Magurskim Parku Narodowym i jego otulinie. *Turyzm, 10* (2), 31-56.

Liszewski, S. (2009). Przestrzeń turystyczna parków narodowych w Polsce. In: B. Domański, W. Kurek (eds), *Gospodarka i Przestrzeń* (pp. 187-201). Kraków: Instytut Geografii i Gospodarki Przestrzennej UJ.

Mazurczak, M. (2009). Realizacja założeń ekoturystyki na obszarze Parku Narodowego Ujście Warty. *Studia i Materiały CEPL*, *4*, 206-211.

Ochrona Środowiska 2008 (2008). Warszawa: Główny Urząd Statystyczny.

Ochrona Środowiska 2018 (2018). Warszawa: Główny Urząd Statystyczny.

Partyka, J. (2002). *Użytkowanie turystyczne parków narodowych*. Ojców: Ojcowski Park Narodowy.

Partyka, J. (2010a). Ruch turystyczny w polskich parkach narodowych. *Folia Turistica*, *22*, 9-25.

Partyka, J. (2010b). Udostępnianie turystyczne parków narodowych w Polsce a krajobraz. *Prace Komisji Krajobrazu Kulturowego, 14*, 252-263.

Parzych, K. (2014). Wybrane cechy ruchu turystycznego w Słowińskim Parku Narodowym na podstawie badań ankietowych. *Journal of Education, Healt and Sport*, *4* (13), 246-256.

Prędki, R. (2015). Ruch turystyczny w Bieszczadzkim Parku Narodowym w latach 2012-2014. *Roczniki Bieszczadzkie*, *23*, 367-385.

Rogowski, M. (2017). System Monitoringu ruchu turystycznego (SMrt) w Parku Narodowym Gór Stołowych – założenia i wybrane wyniki. *Studia i Materiały CEPL*, *52*, 158-165.

Rogowski, M. (2018). System Monitoringu ruchu turystycznego (SMrt) w Parku Narodowym Gór Stołowych dla potrzeb badań przestrzeni turystycznej. *Prace i Studia Geograficzne, 63.3*, 153-172.

Semczuk, M. (2012). Ruch turystyczny w Gorczańskim Parku Narodowym. *Ochrona Beskidów Zachodnich*, *4*, 98-110.

Smoleński, M. (2006). Turystyka w parkach narodowych. In: R. Ziółkowski (ed.), *Praktyczne aspekty rozwoju turystyki i rekreacji na obszarach przyrodniczo cennych.* Białystok: Wydawnictwo Politechniki Białostockiej.

Stasiak, A. (1997). Turystyka w parkach narodowych – obszary konfliktów, *Turyzm*, *7* (2), 5-24.

Stasiak, A., Śledzińska, J., Włodarczyk, B. (eds) (2014). *Szlaki turystyczne. Od pomysłu do realizacji*. Warszawa: Wydawnictwo PTTK „Kraj".

Szyda, B., Sokołowski, D. (2013). Turystyczne użytkowanie Parku Narodowego Bory Tucholskie. *Studia i Materiały CEPL*, *37*, 305-312.

Ustawa z dnia 16 kwietnia 2004 r. o ochronie przyrody. Dz.U. 2004, nr 92, poz. 880.

Walas, B. (ed.) (2019). *Model optymalizacji funkcjonowania parków narodowych w Polsce w otoczeniu społeczno-gospodarczym*. Sucha Beskidzka: WSTiE.

Wieniawska-Raj, B. (2007). Dynamika ruchu turystycznego w Karkonoskim Parku Narodowym. *Opera Corcontica*, *44*, 593-602.

Włodarczyk, B. (1993). Funkcja turystyczna Świętokrzyskiego Parku Narodowego w świetle badań ruchu turystycznego. *Turyzm*, *1*, 5-29.

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