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Tourists' Attitudes towards Visitor Management and Restrictions in the National Parks in the Carpathian Mountains

Abstract. The purpose of the survey was to determine visitors' knowledge of the regulations, their attitudes towards them as well as the declared degree of compliance. The article offers a comparative analysis of visitor management regulations in four national parks in the Carpathian Mountains (Tatra, Pieniny, Babia Góra, Bieszczady) and reports results of a survey involving 403 tourists who visited the parks in July and August 2021. Restrictions on tourist traffic in the four national parks vary significantly. Tourists' attitudes towards these restrictions were found to be generally positive, and most respondents said they followed all or most of them. However, these results are inconsistent with the reported knowledge of the restrictions: a considerable percentage of the respondents were not familiar with them.

Keywords: national parks, tourism, tourist traffic regulations, attitudes

1. Introduction

The conflict between environmental protection in national parks and enabling tourists to visit them is the direct result of the general definition of areas classified

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as national parks (IUCN¹ category II). In addition to environmental protection, the possibility of visiting national parks and using them for different forms of active tourism is one of the main reasons why they are created. At the same time, making national parks available for tourism can pose a threat to the natural environment of national parks (Eagles, McCool and Haynes, 2002; Spenceley et al., 2015).

The problem is particularly relevant in mountain national parks, where the pressure to enable tourists access to these areas is especially strong: mountain areas are exceptionally attractive for various forms of tourism, including hard tourism (e.g. skiing) and soft tourism (forms of active tourism, such as hiking, ski touring, mountain biking). Using various means of enabling access, including all kinds of restrictions, administrators of national parks try to minimise these negative impacts.

Moreover, studies conducted in Alpine countries and in the Tatra Mountains (Muhar et al., 2007; Taczanowska et al., 2019a; Taczanowska et al., 2019b; Salim et al., 2022) indicate that the model of tourism in mountain regions has been changing in recent years, with a growing number of visitors engaging in various forms of active tourism, who are mainly motivated by the pursuit of adventure, experience of nature and physical exertion, not just to learn about new places (Weaver and Lawton, 2017; Niezgoda and Nowacki 2020; Carrascosa-López et al., 2021; Lebrun, Su and Bouchet, 2021). While infrastructural requirements associated with these forms of tourism are relatively small, they can also have a negative impact on the natural environment and measures to mitigate these impacts may require different managements tools from those employed with regard to other forms of tourism (Manning, 2014; Leung et al., 2018; Jodłowski, 2016; Jodłowski, 2020; Oleśniewicz et al., 2020).

The scope of restrictions on access to national parks varies greatly between countries, or even regions within one country, depending on the approach to environmental protection, which is reflected in specific regulations. Visitor management models in the national parks in the Alps were analysed by Pichler-Koban and Jungmeier (2017). In Poland, like in other countries of Central Europe (Slovakia, Czechia), regulations governing access to national parks are much more restrictive than in other European countries (Gawrysiak-Zabłocka, 2020; Jodłowski, 2020). In addition, tourism infrastructure (especially cable transport and ski lifts) in Polish national mountain parks is much more developed than that found in national parks of the Alps, the Pyrenees or the Scandinavian Mountains (Jodłowski, 2020).

The degree to which such regulations are observed by tourists depends on how familiar they are with the rules and to what extent they accept them. The level

¹ The International Union for Conservation of Nature

of acceptance in turn depends on whether tourists understand the purpose of the rules and find them reasonable (Jodłowski, 2020). Information about tourists' knowledge of these regulations and their attitudes to them is therefore an important element of tourist traffic management in protected areas and can be used to plan educational activities and possibly modify existing regulations.

2. Aim

The study described in this article has two research goals. The first one is to compare regulations that govern tourists' access to selected national parks in the Polish Carpathian Mountains. The second goal is to determine tourists' knowledge of general regulations that should be observed in national parks, as well as specific rules regulating access to various forms of tourism in the parks, and to obtain information about tourists' attitudes towards restrictions and the level of compliance.

3. Scope

The study concerns four of the six national parks located in the Polish Carpathian Mountains: one in the Outer Western Carpathians (Babia Góra NP), two in the Inner Western Carpathians (Tatra NP and Pieniny NP), and one (Bieszczady NP) in the Outer Eastern Carpathians (Solon et al., 2018; Richling et al., 2021). The parks offer conditions for various forms of active tourism, such as hiking, skiing, ski touring, climbing and mountain biking, and also horse riding in Bieszczady NP (Jodłowski, 2020). Another characteristic of the parks is the fact that a large percentage of their total area is under strict protection (about 70% in Tatra NP and Bieszczady NP, the highest share of all national parks in Poland (Fig. 1). Consequently, restrictions on tourist traffic in these parks are relatively high.

Babia Góra NP is the only part of the Beskidy Mountains with clear altitudinal zonation; in addition to forest plant communities, other protected habitats include dwarf pine scrub and non-forest communities of the Alpine zone, as well as landslide and periglacial geomorphology (Kondracki, 1991; Jodłowski, 2007a). Bieszczady NP was created to protect natural ecosystems of the primeval Carpathian forest, with numerous populations of large herbivorous and carnivorous mammals, birds of prey, as well as zones of montane meadows with semi-natural communities of high-mountain meadows with Eastern Carpathian plant species (Winnicki and

Zemanek, 2009). Pieniny NP was created in 1932 to protect the unique landscape of limestone formations, not found anywhere else in Poland or in Europe, featuring the Dunajec River Gorge, with semi-natural meadow plant communities and open rock vegetation. It is one of Poland's most biodiverse habitats, boasting 1100 species of vascular plants (Razowski, 2000). Tatra NP includes the Polish part of the Tatras, with the best representation of high mountain landscapes in the Carpathian Mountains (Troll, 1972), characterised by altitudinal zonation, with post-glacial landforms including post-glacial lakes and karst landforms with numerous cave systems. Many species of plants and animals are endemic to the Western Carpathian Mountains, e.g. the Tatra chamois, the Tatra marmot, which are regarded as flagship species (Jodłowski, 2007a; Jodłowski, 2020). Three national parks — Babią Góra, Bieszczady i Tatra — are listed as UNESCO biosphere reserves, and beech forests located in Bieszczady NP were inscribed on UNESCO's World Heritage List in 2021 as part of the "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe".

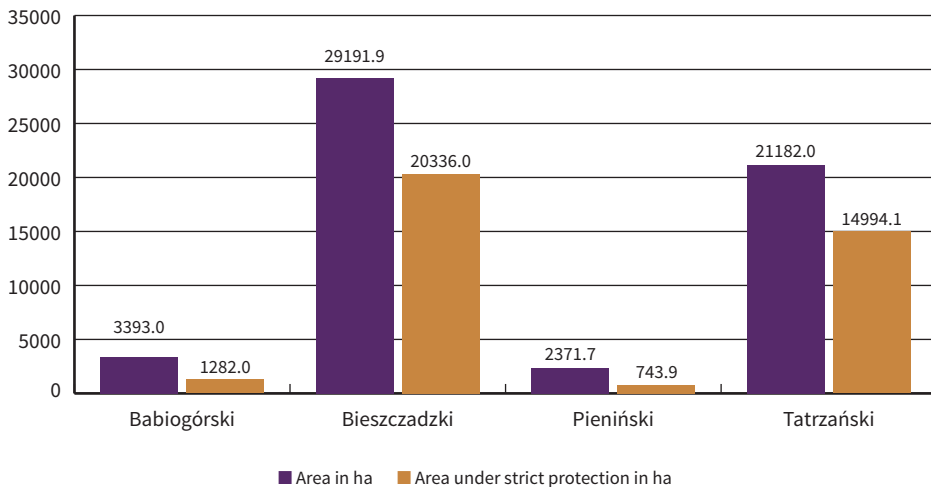


Figure 1: Total land area of the four national parks and the land area under strict protection

Source: Główny Urząd Statystyczny, Statistics Poland (2022)

The four national parks are among the most visited in Poland and can boast well-developed tourism infrastructure (a network of signed tourist trails, accommodation facilities), Although the length of tourist trails in each of the parks varies, the network density per 1 km² is quite similar and ranges from 1.29 in Tatra NP to 1.59 km in Bieszczady NP (Table 1).

Table 1: Tourism in the four national parks (data for 2021).

Park name	Number of visitors in thousands	Tourist trails in km	Tourist trails per 1 km ² of the park	Shelters	Educational trails	Educational events
Babiogórski	142 000	55.0	1.45	1	8	28
Bieszczadzki	891 000	484.0	1.59	1	47	44
Pieniński	1 078 000	35.2	1.48	–	32	8
Tatra	4 789 000	275.0	1.29	8	1303	254

Source: Główny Urząd Statystyczny, Statistics Poland (2022)



Figure 2: Density of tourist traffic in the four parks in the period 2019–2020

Source: Główny Urząd Statystyczny, Statistics Poland (2022)

Thanks to a dense and well-maintained network of tourist trails, visitors can engage in various forms of active tourism and thanks to the well-developed tourism infrastructure the parks attract large numbers of visitors every year: in 2021, they were visited by 6.9 million tourists. Tatra NP and Pieniny NP were the most frequently visited parks. The highest density of tourist traffic was recorded in trails located in Pieniny NP and Bieszczady NP, while the lowest — in Babia Góra NP. The highest number of tourists per 1 km² was recorded in Pieniny NP (over 34 thousand) and Tatra NP (16.5 thousand) (Fig. 2) (Kruczek, 2022). During the pandemic, despite temporary closures, the four parks were visited by record numbers of visitors (more than in 2019) and in 2021 the number of visitors in Tatra NP reached 4.78 million, making it one of the most popular national parks in Europe (Fig. 3) (Kruczek, 2022).

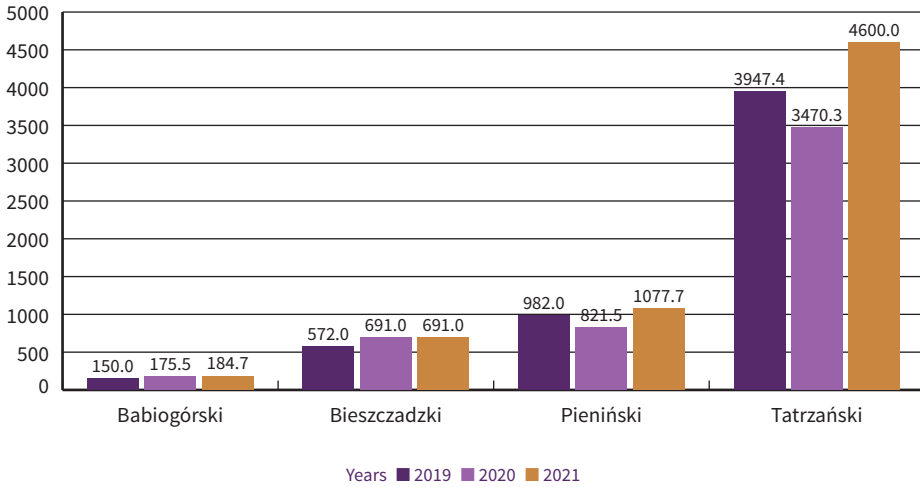


Figure 3: The number of visitors in the four national parks in 2019–2021

Source: Główny Urząd Statystyczny, Statistics Poland (2022)

4. Research method

The comparison of regulations concerning tourist traffic management in national parks is based on the analysis of external documents, including the Act on Nature Conservation, protection plans, protection tasks, ordinances and regulations related to tourism activity issued by park directors (Table 2), as well as materials published on official websites and social media accounts of national parks.

Data about visitors' knowledge of the regulations and declared level of compliance were collected during an online survey conducted via the Profitest platform. Information about the survey was posted in social media (Facebook groups related to tourism) and was sent by email to students of the Faculty of Tourism and Recreation at the University of Physical Education in Krakow. The survey was also conducted among park visitors by providing them with the link or the QR to the questionnaire that could be accessed in a mobile phone.

The sample consisted of 403 tourists who visited one of the four Polish national parks in July and August 2021. 283 respondents completed all parts of the questionnaire². Because responses of other participants who had not completed the whole questionnaire were also taken into account in the analysis, in some cases, the sample size is higher than 283.

² 283 respondents provided answers to questions about general regulations in (Table 3, Figure 4). In the case of specific prohibitions shown in Tables 6–13, the sample size was 235 or 232.

Table 2. Acts and regulations governing tourists' access to national parks

Acts and regulations	the Act of 16 April 2004 on Nature Conservation (Dz. U. 2004, nr 92, poz. 880)
	the Act of 18 August 2011 on mountain safety and rescue and managed ski routes (Dz. U. 2011, nr 208, poz. 1241)
	Regulation of the Council of Ministers of 6 May 1997 on determining safety conditions for people spending time in mountains, swimming, bathing and engaging in water sports (Dz. U. 1997, nr 57, poz. 358)
Protection plans	Regulation of the Minister of the Environment of 1 July 2014 on the establishment of an environmental protection plan for Pieniny National Park (Dz. U. z dnia 31 lipca 2014 r., poz. 1010)
	Regulation of the Minister of the Environment of 22 July 2019 on the establishment of an environmental protection plan for Babia Góra National Park (Dz. U. z dnia 5 września 2019 r., poz. 1699)
	Regulation of the Minister of the Environment of 12 August 2021 on the establishment of an environmental protection plan for Tatra National Park (Dz. U. z dnia 12 sierpnia 2021 r., poz. 1462)
Ordinances issued by directors of national parks	Ordinance 15/2013 issued by the Director of Tatra National Park on 19 April 2013 regarding the obligation to provide supervision of a certified mountain guide in Tatra National Park
	Ordinance 3/2017 issued by the Director of Tatra National Park on 23 February 2017 regarding hiking, biking and skiing in Tatra National Park
	Ordinance 8/2018 issued by Director of Tatra National Park on 15 June 2018 regarding mountaineering and extreme skiing in Tatra National Park
	Ordinance 12/2019 issued by the Director of Babia Góra National Park on 19 March 2019 r. w regarding the rules of visitor traffic in Babia Góra National Park
	Ordinance 4/2021 issued by the Director of Pieniny National Park on 15 March 2021 regarding the introduction of rules for visitors and admission fees charged in Pieniny National Park
	Ordinance 1/2022 issued by the Director of Bieszczady National Park on 3 January 2022, regarding the rules of visitor traffic in Bieszczady National Park
	Ordinance 19/2022 issued by the Director of Babia Góra National Park on 2 September 2022 regarding the rules of visitor traffic in Babia Góra National Park

The survey questionnaire was divided into four parts. The first one was intended to determine visitors' knowledge about regulations in a given park, including specific restrictions regarding tourists' access. The purpose of the second part was to elicit information about tourists' attitudes towards regulations governing tourist activity in national parks. The third part, which is not analysed in this article, included questions about the significance of national parks as natural resources for the society during crisis situations like the COVID-19 pandemic. The last section was designed to collect socio-demographic information about respondents (sex, age, level of education, place of residence), who were also asked to indicate which national parks they had visited in the last three years.

Responses to questions in the first part of the questionnaire were given on a 5-point Likert scale (1 — it definitely is, 2 — it probably is, 3 — I don't know, 4 — it probably isn't, 5 — it definitely isn't). In the analysis of data from the second part, relative frequencies of responses associated with each value or class of values were calculated.

5. Characteristics of respondents

Survey respondents were predominantly female (65.6%) and lived in large cities (49.3%). Most of them were in the age category between 18 and 29 years (48.4%) and with higher education (56.7%).

Table 3: Sample structure by sex, age, level of education and place of residence

Sex	%	Place of residence	%
female	65.6%	rural	27.5%
male	34.4%	urban with a population of up to 50 thousand	23.2%
		urban with a population of over 50 thousand	49.3%
Level of education	%	Age	%
elementary	3.3%	under 18	2.9%
vocational	1.5%	from 18 to 29	48.4%
secondary	38.5%	from 30 to 55	32.0%
higher	56.7%	over 55	16.7%

The most popular national park was Tatra NP visited by 60% of respondents. Pieniny NP and Babia Góra NP were visited by almost half of respondents.

Table 4: Popularity of national parks among the respondents

National park	Number (percentage) of respondents who have visited a given park (n = 403)	Overall popularity of a given park
Babiogórski	150 (37,1)	17,6%
Tatra	245 (60,8)	28,9%
Pieniński	191 (47,5)	22,6%
Bieszczadzki	194 (48,2)	22,9%
Other	66 (16,5)	7,9%
Total	847 responses	100,0%

6. Regulations governing tourists' access to national parks

Article 15 of the Act of 16 April 2004 on Nature Conservation lists prohibitions that exist in national parks. Prohibited activities include catching, killing, frightening animals, collecting eggs and antlers (Art. 15, item 3), collecting or destroying plants and fungi (Art. 15, items 5 and 13), collecting rocks and fossils (Art. 15, items 8), noisy behaviour (Art. 15, item 20). The list also includes all forms of tourist activity (Art. 15, items 15, 17, 21, see Table 5). Access to national parks is granted by virtue of exceptions and derogations from existing prohibitions or, less commonly, by specific provisions made in environmental protection plans. Such plans have been created for Pieniny NP (2014), Babia Góra NP (2019) and Tatra NP (2021). Regulations governing tourists' access to national parks are issued by park directors and apply to all aspects associated with visitor traffic (Pieniny, Babia Góra, Bieszczady) or to specific forms of tourism and activities associated with tourism management (guided tours, training) in Tatra NP. Abridged versions of regulations issued by park directors can be found on official websites of national parks or on information boards located in the parks (Gawrysiak-Zabłocka, 2020; Jodłowski, 2020). Information about rules for park visitors is also published in parks' social media accounts but it is not frequently updated, with the exception of Tatra NP (Jodłowski, 2020).

Regulations regarding various forms of tourism that are in place in different national parks vary when it comes to general policies and specific rules concerning visitor behaviour.

6.1. Hiking

In accordance with the Act on Nature Conservation, walking off designated trails is prohibited in all national parks in Poland (Art. 15, item 15). It should be pointed out that this kind of behaviour is treated much more restrictively in Poland than is the case in national parks in other European countries (except Slovakia and parts of Czechia), where visitors are only encouraged to follow designated trails. As noted earlier, the trail network in the four national parks is relatively dense (Table 1) and enables tourists to reach the majority of summits as well as other attractive destinations. The only exception is Tatra NP (TNP), where relatively many attractive trails are not available for hikers: some of them can be accessed by mountaineers, others can only be used in the presence of a certified mountain guide of 1st or 2nd class.

The majority of national parks have a rule against walking after nightfall, which is not regulated by the Act on Nature Conservation but has been introduced by park directors. Babia Góra NP is the only park that has not introduced this kind of

Table 5: Regulations concerning specific kinds of tourist activity in national parks

	Nature Conservation Act	Babiogórski NP	Tatra NP	Pieniński NP	Bieszczadzki NP
Hiking	walking off designated trails is prohibited	only along designated trails	only along designated trails	only along designated trails	only along designated trails
Walking after nightfall	not regulated	not prohibited	prohibited from dusk to dawn from 1 April to 30 September	prohibited from one hour after nightfall to one hour before dawn	walking only allowed from sunrise to sunset
Camping	camping prohibited except for designated areas	one designated camping site	completely prohibited	completely prohibited	three designated areas
Walking with dogs	walking with dogs is prohibited in areas under strict and active protection (is allowed in landscape protection areas)	completely prohibited, in the regulations according to the Act	prohibited (with the exception of the Chochołowska Valley and "Droga pod Regłami" trail)	completely prohibited	prohibited except for public roads
Obligatory presence of a guide	not regulated	for organised groups	for groups of children and teenagers	for organised groups	for groups of children and teenagers
Skating	skiing off designated trails is prohibited	only along designated trails (in the forest zone + a ridge trail across Diablak), season end – 31 March	only along designated trails (summer trails + ski trails), with so-called winter versions; sufficient snow cover, the end of season is established specifically for a given year	only along designated trails (all are summer trails)	only along designated trails (summer trails + ski trails), with so-called winter versions; sufficient snow cover,
Biking	biking off signed trails is prohibited	only along designated trails (4 trails in the forest zone)	only along designated trails (incl. Dolina Chochołowska, Kalatówki, Dol. Suchejej Wody Gąsienicowej, Droga pod Regłami)	prohibited (except for 3 short sections of public roads)	only along designated trails (mainly along public roads)
Climbing	climbing outside designated places is prohibited	completely prohibited	only in designated places (most rock faces in High Tatras and 3 w Regłowa Tatra Mountains)	completely prohibited	completely prohibited

prohibition in order to enable tourists to climb Babia Góra to watch the sunrise, an activity that has become popular in recent years (Mocior et al., 2013). In the other parks, rules against walking after nightfall are formulated in different ways. In Bieszczady NP walking is only allowed from sunrise to sunset. In Pieniny NP and TNP less precise phrasing is used, involving astronomical terms: dusk (also nightfall) and dusk. In Pieniny NP the prohibition starts one hour after nightfall and lasts until one hour before dawn. In TNP — from dusk to dusk but only in the period from 1 April to 30 September.

Rules about walking with dogs are equally imprecise. According to the Act on Nature Conservation, tourists are not allowed to walk with dogs in areas under strict protection and active protection. The prohibition does not apply to landscape protection areas. There is an exception for shepherd dogs and assistance dogs, including guide dogs for people with disabilities (Art. 15, item 16). Specific rules adopted by the four national parks do not refer to this article, with the exception of Babia Góra NP. In the other three parks walking with dogs is generally also prohibited, with the exception of designated areas in TPN (which do not entirely correspond to the landscape protection area), and public roads in Bieszczady NP.

In accordance with Art. 15, item 23 of the Act, camping is prohibited everywhere in the parks except for places designated by park directors. Camping sites have only been designated in Babia Góra NP and Bieszczady NP. In addition, during the summer, mountain climbers are allowed to camp at Polana Szałasiska in TNP, but the use of this camping site is regulated by the TNP environmental protection plan adopted in 2021, and not by the director's ordinance. It is also worth noting that camping is not defined in regulations and is customarily understood as referring to sleeping in tents.

All the four parks have introduced admission fees; in TNP, fees are charged every time visitors enter the park; in Pieniny NP, tourists are only charged for access to the summits of Sokolica and Trzy Korony in the summer. Until recently, fees in Bieszczady NP and Babia Góra NP were only charged at selected entrances, but nowadays visitors have to buy a ticket online, if it cannot be purchased at the entrance.

In addition, all four parks have introduced the obligation for organised groups to be accompanied by a certified mountain guide, which, until 2012, resulted from the Regulation of the Council of Ministers of 6 May 1997, and nowadays is established by ordinances issued by park directors (Zawistowska, 2011; Wolski, 2015). In Babia Góra NP and Pieniny NP this obligation applies to all organised groups; in Tatra NP and Bieszczady NP — to groups of children and teenagers. In addition to official qualifications, mountain guides need to have a valid licence issued by the relevant park.

6.2. Skiing

Skiing in national parks is prohibited with the exception of areas designated by park directors (Art. 15, item 15). The Act does not specify what forms of activity are prohibited or allowed (managed ski slopes, the use of ski lifts or ski touring / backcountry skiing) (Bielański, 2010). The extent of exceptions granted by each park varies considerably. Ski facilities with appropriate infrastructure can only be found in TNP (and Karkonosze NP, which is not considered in the study). In addition, skiing is allowed along nearly all (except for three) summer trails, with so-called winter versions. Skiing is only allowed when snow cover is sufficiently thick and the end of skiing season is specifically established every year, sometimes separately for the High and Western Tatras. In addition, in the High Tatras, in areas where climbing is allowed, several routes have been designated for extreme skiing, where climbers are also allowed to use skis to ascend and descend.

Rules regarding ski touring / backcountry skiing in Pieniny NP and Bieszczady NP are less complicated. All signed trails, including winter versions, can be used by skiers. When the survey was conducted, ski touring in Babia Góra NP was restricted to three trails in the forest zone; for example, there was no access to the section of the Main Beskid Trail from the Krowiarki pass along the Diablak summit to the Brona Pass, which is particularly attractive for skiers. In addition, to protect the population of the black grouse, skiing was also prohibited after 1 February. However, at the end of 2022, a new regulation was introduced, which extended the skiing season until 31 March and designated additional ski trails, including the one along the ridge to the Diablak summit. Unfortunately for tourists, information about the change did not appear in the park's social media posts until the end of January 2023. For safety reason, in all four parks foot traffic along summer trails has priority over skiers, whereas walking along ski routes is often prohibited.

6.3. Mountain biking

The prohibition against biking in national parks, with the exception of designated routes, is also included in the Act (Art. 15, item 15), but specific rules regarding mountain biking vary depending on the park. Only three very short fragments of public roads have been designated for biking in Pieniny NP; in Bieszczady NP biking is also only allowed along public roads and on a few designated routes, but the total length of these routes is much longer. In Babia Góra NP, there are only a few biking routes located in the forest zone, but it is not possible to ride a bike along the Górny Płaj trail to the shelter in Markowe Szczawiny, which is particularly attractive for bikers. The biggest number of trails can be used by bikers in TNP (e.g. from Brzeziny

to Hala Gąsienicowa, to Kalatówki or along the Chochołowska Valley). To ensure the safety of hikers, bike traffic is not allowed on the road to the Morskie Oko Lake or along the Kościeliska Valley. As in the case of ski touring, hikers walking along summer trails that can be used by bikers have priority.

6.4. Climbing

Mountaineering and rock climbing in national parks is generally prohibited with the exception of places designated by park directors (Art. 15, item 17 of the Act). Such places/areas have only been designated in TNP; they include the majority of rock faces in the High Tatras and three rock faces in the Regłowe Tatras (Jodłowski 2011). In the Western Tatras, which are also very attractive for climbers, climbing is completely prohibited. It is worth noting, however, that cave exploration, known as potholing or spelunking, is allowed in the Western Tatras. Additional rules have been introduced for rock climbers, e.g. with respect to ways of approaching climbing routes or rules regarding the installation of climbing bolts. In other national parks in Poland, rock climbing is only allowed on a few rock faces and inselbergs in the Góry Stołowe NP, in Karkonosze NP and Ojców NP (Jodłowski, 2011). It should be pointed out that, apart from climbing routes in TPN, rock faces that could be used by rock climbers can only be found in the Pieniny Mountains, but they are not as attractive as those in the other parks mentioned above.

7. Survey results

Respondents' knowledge of prohibitions in national parks proved to be quite good. Asked about whether hunting, catching or killing animals is prohibited in national parks, 84.1% of respondents chose the answer "it definitely is". 81.3% of respondents chose the same answer in response to the question about the prohibition against frightening animals. In responses to questions about the prohibition against destroying burrows and nests, destroying plants, making noise and littering — respectively 83%, 83%, 85.9%, 77.7% of respondents were confident about the correct answer. Respondents turned out to be less familiar with prohibitions against collecting antlers and collecting rocks and minerals: only 49.1% and 53.7% confidently chose the correct answer. In both cases, over 15% of respondents selected answers "it definitely isn't" or "it probably isn't". 20.1% and 12.4% respectively answered "I don't know" (Fig. 4). The level of uncertainty was the highest with respect to prohibitions that do not exist in national parks, namely the prohibition against the use of insect

repellents, halogen flashlights and shortwave radios. The share of “I don’t know” and the combined share of “it definitely is” and “it probably is” answers exceeded 20%. The percentage of correct answers in each case was below 50% (Fig. 4).

Respondents’ knowledge of specific regulations that are in effect in each of the parks was much lower. The only question to which the majority of respondents provided correct answers was about that about the prohibition against walking off designated trails (Table 6): in the case of TPN, 72.3% of respondents answered correctly, with 16.6% responding “I don’t know”, whereas the share of correct answers about the respective rules in the other three parks was about 55%, with at least 25% of respondents selecting the “I don’t know” answer (Table 6).

Table 6: Is walking off designated trails and educational paths prohibited in the park? (n = 235)

	BgNP	TNP	PNP	BdNP
YES, it is prohibited in the whole park.	55.7%	72.3%	54.9%	54.9%
YES, but it is only prohibited above the forest zone.	3.8%	2.1%	3.0%	3.8%
YES, it is only prohibited in the summer season (15.06–30.09)	0.4%	3.0%	1.7%	2.6%
YES, it is but one can walk 50 meters of the trail.	2.6%	1.3%	2.6%	3.0%
NO, but one can only walk along trodden paths.	2.1%	0.9%	1.3%	2.1%
NO, one can walk all over the park, also off designated trails.	0.9%	0.4%	1.7%	0.0%
I DON'T KNOW.	26.8%	16.6%	28.1%	25.5%

Table 7: Is skiing / ski touring off designated trails prohibited in the park? (n = 235)

	BgNP	TNP	PNP	BdNP
YES, it is prohibited in the whole park.	11.9%	8.5%	9.8%	7.2%
YES, but it is only prohibited above the forest zone.	1.7%	2.1%	3.4%	2.1%
NO, but it is only allowed in a specified period.	7.2%	9.4%	3.4%	6.0%
NO, provided the snow cover is sufficiently thick.	5.5%	5.1%	3.0%	3.4%
NO, but one can only go ski touring along summer trails.	1.3%	1.7%	1.7%	2.1%
NO, but one can only go ski touring along ski trails.	10.2%	18.3%	8.1%	11.1%
NO, but one can only use trails and move in areas specially designated for skiers.	14.5%	18.3%	12.3%	12.8%
NO, one can ski all over the park, also off designated trails	1.3%	1.3%	2.1%	2.6%
I DON'T KNOW	38.7%	31.5%	49.4%	45.1%

Respondents’ knowledge of rules concerning skiing was very low. Regardless of the park, “I don’t know” was the most frequently selected answer (over 30%, and nearly 50% in Pieniny NP). The second most popular answer was that skiing was allowed along trails and in areas specially designated for skiers (from 12% to 18% of responses). Slightly fewer responders answered correctly that skiing was only

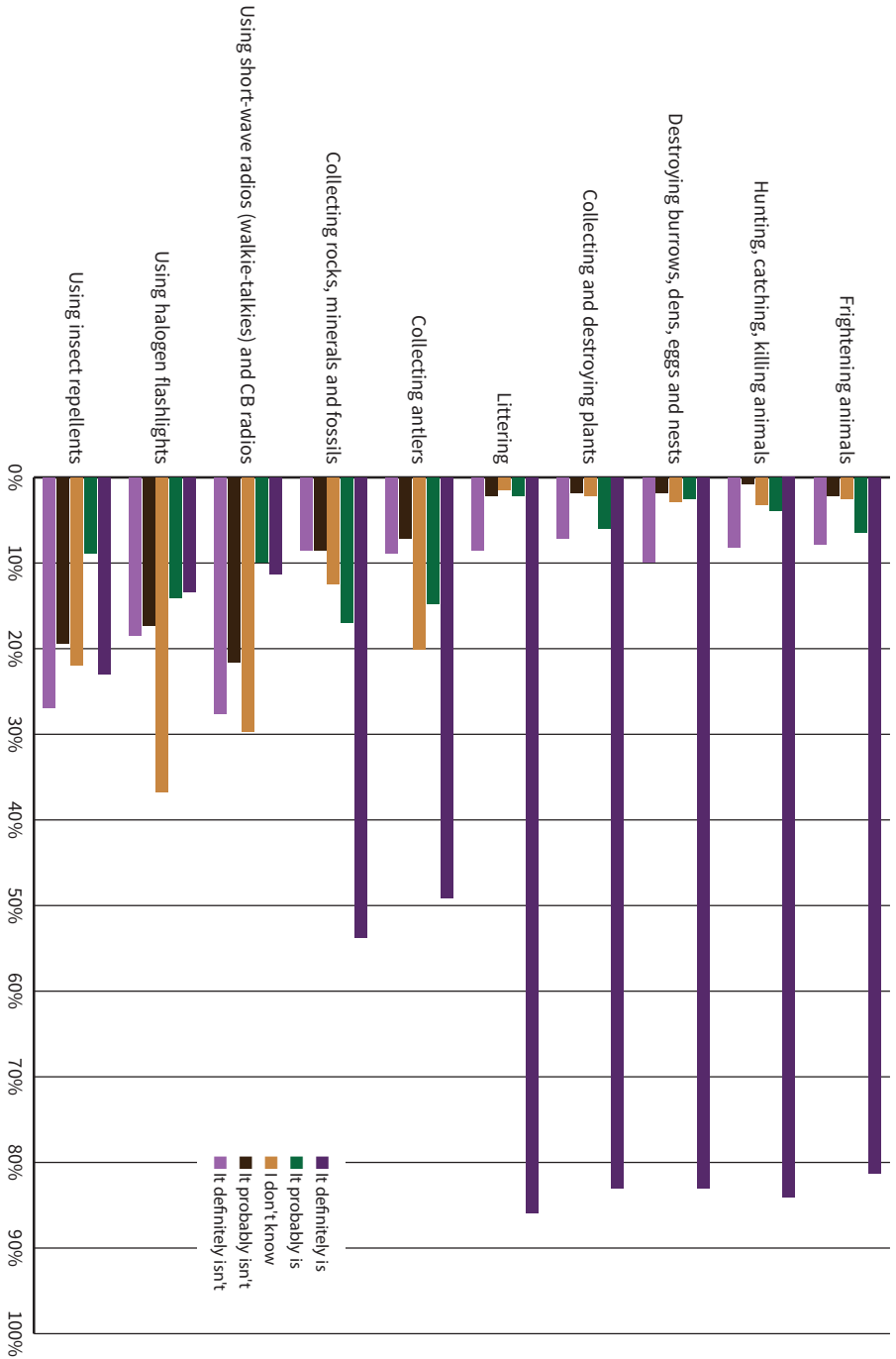


Figure 4: Respondents' knowledge of prohibitions in Polish national parks (n = 283).

allowed along designated ski trails (8–18%). Between 7% and 12% of respondents were convinced that skiing was entirely prohibited in national parks (Table 7).

Answers were somewhat better in response to the question about mountain biking. While the percentage of “I don’t know” answers was still high (30–38%), about a third of respondents (29–34.5%) answered correctly that mountain biking was only allowed along designated trails. 15–23% of respondents were convinced that biking was prohibited in the whole park (except for public roads). It should be noted that this answer is very close to the actual rules that are in effect in Babia Góra NP, Pieniny NP and Bieszczady NP (Table 8).

Table 8: Is mountain biking prohibited in the park? (n = 235)

	BgNP	TNP	PNP	BdNP
YES, it is prohibited in the whole park (except for public roads).	17.0%	23.0%	14.9%	15.3%
YES, but it is only prohibited above the forest zone.	0.9%	0.9%	1.3%	0.0%
NO, but it is only allowed in a specified period.	3.4%	2.6%	2.6%	3.0%
NO, but one can only go biking along summer trails.	2.1%	3.4%	3.8%	3.8%
NO, but one can only use trails designated for bikers.	33.2%	34.5%	29.8%	33.2%
NO, one can go biking all over the park, also off designated trails.	1.7%	1.3%	2.1%	2.1%
I DON'T KNOW.	34.0%	30.2%	37.9%	34.9%

The level of familiarity with the rules concerning climbing was also rather low. As many as 37–48% of respondents answered “I don’t know”, with the exception of TNP, where the percentage of such responses was lower (28%). A considerable share of respondents (19–27%) indicated that climbing was only allowed on designated rock faces, although this answer was correct only in the case of TNP (43.5%). Only about 12% of respondents seemed to know that climbing is completely prohibited in the other three parks, while only 5% of respondents were convinced that the same prohibition applied in TNP (Table 9).

Table 9: Is climbing biking prohibited in the park? (n = 232)

	BgNP	TNP	PNP	BdNP
YES, it is prohibited in the whole park.	12.9%	5.6%	12.5%	12.5%
YES, but it is only prohibited on rock faces and rocks above the forest zone.	1.7%	1.3%	0.4%	0.4%
NO, but it is only allowed in a specified period.	0.4%	2.6%	0.4%	1.3%
NO, but one can only climb designated rock faces and rocks.	27.2%	43.5%	26.3%	19.0%
NO, but one can only climb routes with fixed bolts.	6.0%	7.8%	6.5%	5.6%
NO, one can climb all rock faces and rocks.	6.5%	6.9%	2.6%	3.9%
I DON'T KNOW.	37.1%	28.0%	44.0%	48.3%

The remaining questions concerned prohibitions against walking after nightfall (Table 10), camping (Table 11) and walking with dogs (Table 12). Relatively the biggest number of correct answers was recorded in response to the question about dogs. While the percentage of “I don’t know” answers was quite high (20–31%), over a third of respondents answered correctly that walking with dogs is prohibited in Bieszczady NP, Babia Góra NP and Pieniny NP (except for public roads), although the rule is phrased in slightly different terms in the Act. Interestingly, nearly half of all respondents chose this answer in the case of TNP, although there are two trails where walking with dogs is allowed: only 14% of respondents chose the correct answer (Table 12).

Asked whether camping in the park was prohibited, 44% and 25% chose the correct positive answer in the case of Tatra NP and Pieniny NP, respectively. About a third of respondents was aware that camping was allowed in designated places in Bieszczady NP and Babia Góra NP. The share of “I don’t know” answers ranged from 22 to 28% (Table 11).

The knowledge of the rules regarding walking after nightfall was also rather poor: “I don’t know” answers accounted for 25–35% of all responses in the case of each park. 26.8% answers were correct with respect to Babia Góra NP (no prohibition against walking after nightfall), 23% and 24.7% in the case of Pieniny NP and Bieszczady NP, respectively (walking after nightfall is prohibited throughout the year) and only 17% in the case of TNP (the prohibition only applies in the summer). As many as 31% of respondents thought that walking after nightfall in TNP was prohibited throughout the year (Table 10).

Table 10: Is walking after nightfall allowed in the park? (n = 235)

	BgNP	TNP	PNP	BdNP
Walking after nightfall / before dawn is prohibited throughout the year.	25.1%	31.1%	23.0%	24.7%
Walking after nightfall / before dawn is prohibited, but only in the summer season.	6.4%	17.0%	4.7%	6.0%
Walking after nightfall / before dawn is prohibited, but only in the winter season.	5.1%	6.8%	4.7%	5.1%
Walking in the park is allowed 24 hours a day.	26.8%	15.7%	26.0%	23.8%
I DON'T KNOW.	28.5%	25.5%	34.9%	32.8%

Respondents were not very familiar with the rule concerning the obligation of being accompanied by a mountain guide (17–26% selected “I don’t know”). About a quarter of respondents were convinced that there was no such obligation, another quarter thought the presence of a mountain guide was required in the case of organised groups, which is only true for Babia Góra NP and Pieniny NP. In the

other two parks (TNP and BdNP), the obligation applies to groups of children or teenagers, which only 10% indicated correctly (Table 13).

Table 11: Is camping allowed in the park? (n = 235)

	BgNP	TNP	PNP	BdNP
Camping is prohibited in the whole park.	23.4%	44.3%	25.1%	20.9%
Camping is only allowed in designated places.	34.9%	24.7%	35.7%	35.7%
One can camp anywhere in the park, but only for one night.	3.0%	3.0%	2.6%	3.0%
There are no restrictions regarding camping, provided one doesn't leave any traces.	3.4%	2.6%	1.7%	4.3%
I DON'T KNOW.	27.2%	21.7%	27.2%	28.5%

Table 12: Are dogs allowed to enter the park? (n = 235)

	BgNP	TNP	PNP	BdNP
Walking with dogs is prohibited in the whole park, except on public roads.	38.7%	48.5%	35.3%	37.9%
Walking with dogs is allowed but only along summer trails.	3.0%	1.7%	3.8%	2.6%
Walking with dogs is allowed but only along a few specially designated trails.	6.0%	14.0%	6.8%	7.2%
There are no restrictions regarding dogs, provided they have a muzzle on and are on a lead.	16.2%	11.1%	15.7%	15.7%
I DON'T KNOW.	27.7%	20.9%	31.5%	28.9%

Table 13: Is the presence of a mountain guide obligatory in the park? (n = 235)

	BgNP	TNP	PNP	BdNP
YES, visitors can only move about the park under the supervision of a mountain guide.	6.8%	8.1%	6.0%	5.5%
YES, but only above the forest zone.	3.0%	2.6%	1.3%	1.3%
YES, but only when visitors want to walk off designated trails.	2.6%	8.5%	3.4%	2.6%
YES, but only in the case of organised groups.	23.0%	27.2%	22.6%	22.6%
YES, but only in the case of groups of children or teenagers.	10.2%	9.8%	8.9%	9.8%
NO, there is no such obligation.	24.7%	22.6%	26.4%	24.3%
I DON'T KNOW.	21.7%	16.6%	24.7%	26.4%

In the next section of the questionnaire, respondents were asked to indicate how justified they thought the restrictions in national parks were (Table 14). For the majority (62.4%), they were completely justified by the need to protect the natural environment. Nearly every third respondent thought they were partly justified by the need to protect the natural environment, but in some cases should be relaxed. The view that the restrictions were largely or completely not justified by the need to

protect the natural environment and should be relaxed or eliminated was expressed by very few respondents (1.7% and 0.7% respectively).

Table 14: Opinions about visitor restrictions in national parks.

Restrictions on various forms of tourism in national parks are...	%
...completely justified by the need to protect the natural environment.	62.4
...partly justified by the need to protect the natural environment, but in some cases should be relaxed.	32.4
...largely not justified by the need to protect the natural environment and should definitely be relaxed.	1.7
...completely not justified by the need to protect the natural environment; there should be no restrictions on various forms of tourism in national.	0.7
I DON'T KNOW the reasons for these restrictions, I don't have an opinion about them.	2.8

Respondents' attitudes to the restrictions were linked with their declared level of compliance: Yule's Y, known as the coefficient of colligation, a measure of association between two binary variables, and Spearman's rank correlation coefficient were both 0.23 and were statistically significant at $p < 0.01$. 89% of respondents convinced that the restrictions were justified were found to also said they complied with all (58.4%) or most of them (33.9%). These proportions are similar to those observed in the case of opinions about how justified the restrictions are. A third of respondents admitted to breaking some rules from time to time. Despite results indicating that the level of ignorance of visitor restrictions in national parks is relatively high, only less than 5% of all respondents said that they did not know the rules (Table 15).

Table 15: Attitudes to visitor restrictions in national parks.

Attitudes to restrictions on various forms of tourism in national parks	%
I comply with all restrictions.	58.4
I comply with most restrictions but I break some rules from time to time.	33.9
I comply with some restrictions but quite often I break some rules.	2.8
I don't comply with any restrictions.	0.0
It's hard to say because I'm not very familiar with the rules.	4.9

8. Discussion and conclusions

The results of the survey indicate a high level of acceptance of the restrictions on various forms of tourism in national parks. The majority of respondents also declared a high level of compliance with the rules. The knowledge of general restrictions was relatively high. It can be argued that respondents' knowledge of the

prohibition against killing or frightening animals, destroying plants or littering was probably not evidence of their familiarity with specific regulations regarding protected areas but rather resulted from their general knowledge and intuitions — after all, similar prohibitions are also in place in forests or other green areas. This conclusion is also supported by a considerably smaller percentage of correct answers to questions about putative prohibitions that, in fact, do not exist in national parks.

Survey results clearly indicate a high level of ignorance about restrictions on various forms of tourism, which reveal a significant contradiction between declared levels of compliance and the actual knowledge of these restrictions. It is important to note, however, that while the respondents were asked whether they knew specific rules, the question about declared compliance was general and did not refer to specific regulations. Also, no attempt was made to observe tourists' actual behaviour, which often differs from declared behaviour. In other studies involving groups of specialist tourists, in which respondents were asked about their familiarity with specific rules, attitudes to rules and declared compliance, it was found that as many as 50% of skiers in the Gesäuse National Park in Austria (Sterl, Eder and Arnberger, 2010) and about 40% of climbers in TNP (Jodłowski, 2010) admitted to not following the rules either because they did not know them or because they were not convinced the rules were reasonable. In other studies conducted in TNP (Jodłowski et al., 2014) and in PNP (Witkowski et al., 2010) it was found that hiking off designated trails was relatively rare and accounted only for a small percentage of all tourist traffic. The problem actually identified in both parks was dispersed recreation use along trails, i.e. tourist walking a short distance off trails. In TNP, most off-trail traffic is associated with tourists who go climbing in designated areas (Jodłowski, 2007b) and with ski touring (backcountry skiing) undertaken off trails designated for skiers (Bielański, 2010)

Ignorance of specific rules regarding tourism can largely be explained by the fact that existing regulations are rather complicated and restrictions on particular forms of tourism are not always the same in each of the parks analysed in the study. Another aspect worth noting are differences between restrictions in Polish national parks and those that are in place in Slovakian and Czech national parks, which are also very popular with Polish tourists (in the Tatras, in the Low Tatras, the Malá Fatra or in the Karkonosze — Jodłowski, 2020). A relatively high percentage of respondents selected the correct answer to the question about the prohibition against walking off trail, which exists in all national parks in Poland and also in Slovakia and partly in Czechia. In contrast, the level of familiarity with rules regarding other forms of tourism as well as those about hiking (camping, walking after nightfall or walking with dogs), which differ between the parks, was much lower, with a high percentage of incorrect and “I don't know” answers. This can be

treated as evidence that the parks' information policies are inefficient. Of the four parks, only TNP makes good use of modern channels of communication (websites, social media); in the case of the other three parks, forms of communication used and the frequency with which information is updated leave a lot to be desired (Jodłowski, 2020). Given respondents' acceptance of restrictions as measures of protecting the natural environment, efforts should be continued to improve the effectiveness of educational activities, especially by harmonising and simplifying regulations governing tourists' access, at least to mountain national parks.

9. Limitations and directions for further research

The presented results concern only the opinions of the surveyed tourists. The study is mainly limited by the adopted research method and its geographical scope. The survey questionnaire can only be used to collect data about tourists' declared behaviour and opinions and not about their actual behaviour. To determine to what extent conclusions presented in the study are also valid for other national parks and protected area, one would have to conduct similar surveys in other locations.

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Postawy turystów wobec zasad udostępniania parków narodowych w polskich Karpatach

Streszczenie. Celem badań było określenie znajomości przepisów przez turystów, ich stosunku do nich oraz deklarowanego stopnia ich przestrzegania. W artykule dokonano analizy porównawczej zasad udostępniania dla turystyki czterech karpaccich parków narodowych (Tatrzańskiego, Pienińskiego, Babiogórskiego, Bieszczadzkiego) oraz przedstawiono wyniki ankiety przeprowadzonej wśród 403 turystów, którzy odwiedzili parki w lipcu i sierpniu 2021 r. Przepisy regulujące ruch turystyczny w czterech parkach narodowych znacznie się różnią. Nastawienie turystów do obowiązujących ogra-

niczeń było ogólnie pozytywne, a większość respondentów stwierdziła, że przestrzega wszystkich lub większości z nich. Wyniki te są jednak niespójne z deklarowaną znajomością ograniczeń, która była bardzo niska wśród znacznego odsetka respondentów.

Słowa kluczowe: parki narodowe, turystyka, udostępnianie parków, regulacje, postawy



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