

SCIENTIFIC NOTE

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TOURISM INTENSITY ON TRAILS IN THE PIENINY NATIONAL PARK: SUMMER SEASON 2010

1. INTRODUCTION

Established in 1932, the Pieniny National Park is one of the oldest protected areas of its kind in Poland. It covers an area of 23.46 km² and includes the most precious areas of Pieniny Właściwe and a part of Pieniny Spiskie. Located on the edge of the Carpathian Mountains, the PNP enjoys proximity both to the Beskidy and Tatra Mountains which increases its attractiveness and offers 27 km of walking trails (WRÓBEL 2002) (Fig. 1) which are easily accessible and safe even for inexperienced tourists.

The diversity of the rock formations of the Pieniny Mountains, resulting from their geological history, constitutes an important landscape feature of the Park. The Trzy Korony and the Sokolica peaks, are both provided with viewing platforms for tourists, and alongside the ruins of Pieniny Castle on Zamkowa Góra, constitute the biggest tourism attractions. Among the features most appreciated by Polish and foreign tourists is the picturesque ravine of the Dunajec River where traditional 'flisak' rafting is organized. Nearby, the Czorsztyn reservoir further increases the landscape value of the PNP, at the same time offering tourists who spend their time in the region various types of activities.

Due to its natural treasures and non-environmental attractions, the PNP is a place enjoying huge popularity among tourists, and consequently, a destination visited by a significant number of people. Tourism in the PNP undergoes fluctuates seasonally (KUREK 2007), with ninety five percent occurring in the summer season (WRÓBEL 2002).

Former studies of tourism intensity in the PNP were carried out in the years 1972-4 (BOLLAND 1982) and in 1977 indicators of tourism carrying capacity for walking trails and individual sections were worked out deciding the maximum number of tourists for one day (CELICHOWSKI 1977). Measurements of tourism intensity in the PNP were also carried out by the Association of Geography Students of the Pedagogical University of Kraków in 2007-10 (WARCHOLIK, SEMCZU & BARANOWSKI 2010).

The aim of this article is to present the tourism intensity figures in the Pieniny National Park for the 2010 summer season and compare them with the results for 2007-9. On the basis of the figures and having compared them with the tourism carrying capacity, trail sections greatly exceeding the maximum number of tourists were discovered².

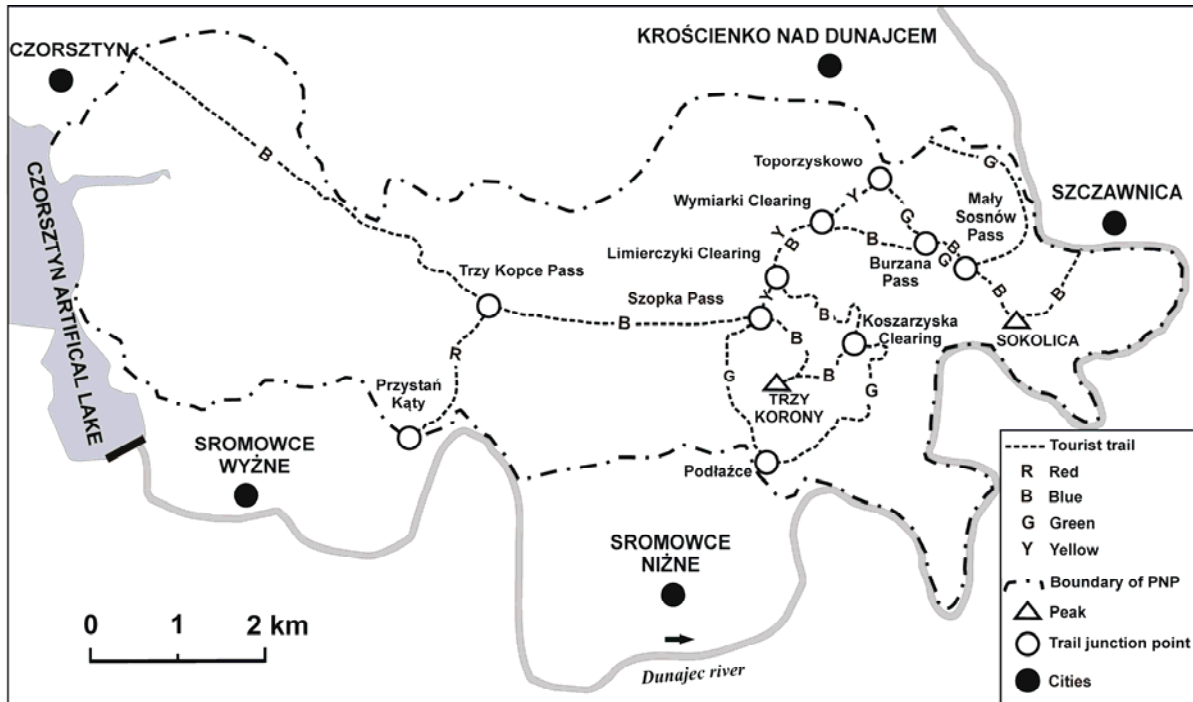


Fig. 1. Tourism trails in the Pieniny National Park
Source: authors' own work

2. METHODS

The monitoring of tourism intensity was carried out at 14 points distributed along the walking trails of the PNP. Measuring points were located halfway on each trail section which eliminated calculation errors resulting from tourist crossovers at trail intersections. At each measuring point there was one observer whose task it was to note down the number of tourists and their walking direction. The measurements were taken on 16th-18th and 22nd-23rd July 2010 (the 17th and 18th were weekend days). Four of the five measurement days were sunny (on two days in the afternoon there were with small occasional showers) and one day was cloudy.

On each day the measurements were carried out for seven hours (9:00-16:00). On the monitoring form the tourists' arrival and departure directions were noted and the number was summed at 15 minute intervals. An advantage of this method is a quantitative result giving a value of tourism intensity. However, this method requires engaging a great number of people with monitoring forms and their appropriate positioning. In such measurements it is not possible to count in tourists going off the trails (BARANOWSKI & LEJA 2010).

On the basis of these figures, an arithmetic mean was calculated which illustrates the intensity of tourism in the summer season on the walking trails of the PNP.

3. TOURISM INTENSITY

The intensity of tourism in the PNP in 2010 showed significant spatial diversity (Fig. 2). The values of tourism intensity for individual trails ranged from 21/day on the section Kąty Przystań-Trzy Kopce Przełęcz, to 966 /day on the section Szopka Przełęcz-Trzy Korony (Table 1).

During the five measuring days of July 2010, the average daily number of tourists entering the PNP was 1198. A similar figure was reached in 2008. At the same time in 2007 and 2009, higher figures were found: 1408 and 1477 /day, respectively (Table 2).

The section Szopka Przełęcz-Trzy Korony was walked by 966 tourists /day, the most intensely used. Measurements taken in previous years showed a similar tendency of tourists to use this section more than others: 2009 - 1238, 2008 - 948, 2007 - 1232 per day (Table 3). The route runs directly to the major attraction of the PNP - that is the Trzy Korony peak - and is used by tourists coming both from the direction of Sromowce Niżne, Krościenko nad Dunajcem, and Czorsztyn.

The second route in terms of its tourism intensity figure turned out to be the section Wymiarki Polana-Limierczyki Polana, with 716 a day in 2010, while in 2009 - 1071, in 2008 - 720, in 2007 - 1038 per day. This section has a transit character and it leads in the direction of the Zamkowa Góra and Trzy Korony.



Key: 1 - boundary of the Pieniny National Park, 2 - settlements, 3 - peak, 4 - trail junction
 Fig. 2. The intensity of tourism on the trails in the PNP in 2010

Source: authors' own work

Table 1. Tourism intensity on the trails in the PNP in 2010

Section	Number of tourists / day
Szopka Przełęcz-Trzy Korony	966
Wymiarki Polana-Limierczyki Polana	716
Wymiarki Polana-Toporzyskowo	550
Podłaźce-Szopka Przełęcz	467
Koszarzyska Polana-Trzy Korony	466
Szopka Przełęcz-Limierczyki Polana	445
Szczawnica-Sokolica	429
Mały Sosnów Przełęcz-Sokolica	424
Limierczyki Polana-Koszarzyska Polana	405
Wymiarki Polana-Burzana Przełęcz	402
Mały Sosnów Przełęcz-Burzana Przełęcz	280
Mały Sosnów Przełęcz-Toporzysko	173
Podłaźce-Koszarzyska Polana	161
Czorsztyn-Trzy Kopce Przełęcz	148
Trzy Kopce Przełęcz-Szopka Przełęcz	146
Burzana Przełęcz-Toporzyskowo	131
Przystań Kąty-Trzy Kopce Przełęcz	21
Pieniny National Park	1,198

Source: authors' own work.

These two routes are included in the yellow trail running through the sites of great tourism attractiveness. A significant concentration of tourists can be observed here at the most attractive sites of the protected natural area of the park (PTASZYCKA-JACKOWSKA 2007).

Table 2. Tourism intensity in the PNP in 2007-10

Year	Tourism intensity	
	total	total /km ²
2010	1.198	51
2009	1.477	62
2008	1.160	49
2007	1.408	60

Source: authors' own work

Table 3. Intensity of tourism on chosen sections of trails in PNP in 2007-10

Section	Year			
	2010	2009	2008	2007
Szopka Przełęcz-Trzy Korony	966	1,238	948	1,232
Wymiarki Polana-Limierczyki Polana	716	1,071	720	1,038
Mały Sosnów Przełęcz-Sokolica	424	700	350	500
Burzana Przełęcz-Toporzyskowo	131	112	104	116
Przystań Kąty-Trzy Kopce Przełęcz	21	45	17	23

Source: authors' own work.

For the section Wymiarki Polana–Toporzyskowo Polana, the figure for tourism intensity in 2010 was 550 per day. In previous years this section had showed a lower intensity as well. This route is taken by tourists moving from Krościenko nad Dunajcem into the heart of the PNP. Fewer tourists turned out to be attracted to the section Burzana Przełęcz–Toporzyskowo as this route has an alternative path, Toporzyskowo–Wymiarki Polana, that is more often chosen (Fig. 2).

Similar to previous years, the lowest tourism intensity in 2010 was noted for the route Przystań Kąty–Trzy Kopce Przełęcz 21 per day. This section lies far away from the most popular sites of the PNP (Trzy Korony, Sokolica).

4. EXCEEDING THE TOURISM CARRYING CAPACITY ON TRAILS IN THE PNP

Tourism carrying capacity is defined as the maximum number of tourists that may visit the same tourism destination at the same time without causing damage and degradation to the natural environment, and consequently, a decrease in the standard of visitors' satisfaction (MIKA 2007). So far no universal indicator for the value of tourism carrying capacity on walking trails in protected areas has been worked out (PSTROCKA-RAK & RAK 2011), and all existing suggestions generate numerous disputes and are of little practical use (GRAJA-ZWOLIŃSKA 2009, Pstrocka 2004).

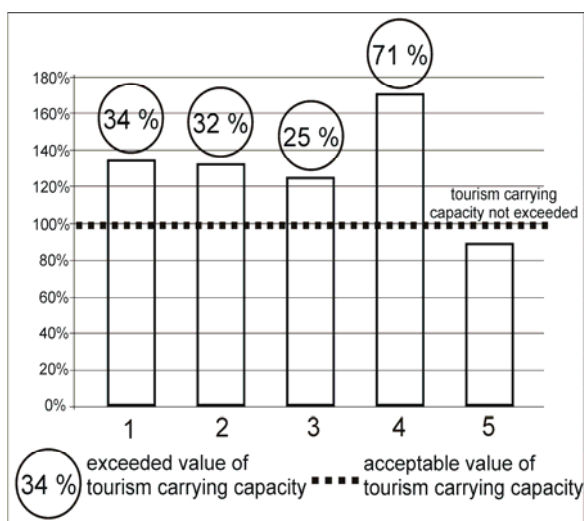


Fig. 3. Exceeded acceptable value of tourism carrying capacity in 2010 on sections of trail I:

1 - Szczawnica-Sokolica, 2 - Sokolica-Sosnów Przełęcz, 3 - Burzana Przełęcz–Wymiarki Polana, 4 - Wymiarki Polana–Toporzyskowo, 5 - Mały Sosnów Przełęcz–Burzana Przełęcz

Source: authors' own work

The achieved results of measuring the intensity of tourism were juxtaposed with the carrying capacity figures calculated for the trail routes by CELICHOWSKI (1977):

I - Szczawnica-Sokolica-Czertezik-Krościenko nad Dunajcem (321 / day).

II - Krościenko nad Dunajcem-Trzy Korony-Zamkowa Góra-Krościenko nad Dunajcem (287 / day).

For route I, the carrying capacity indicator was only not exceeded in the section Mały Sosnów Przełęcz–Burzana Przełęcz. On the other sections the maximum value proposed by CELICHOWSKI (1977) was exceeded (Fig. 3).

For route II, the indicator of carrying capacity was exceeded on all sections (Fig. 4). It was particularly seriously exceeded on the section Szopka Przełęcz–Trzy Korony.

The section Toporzyskowo–Wymiarki Polana was a part of both routes I and II for which CELICHOWSKI (1977) calculated separate carrying capacity indicators.

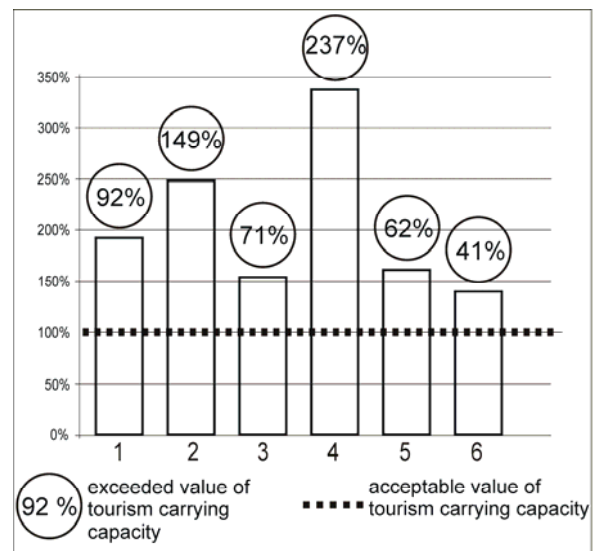


Fig. 4. Exceeded acceptable value of tourism carrying capacity in 2010 on sections of trail II: 1- Toporzyskowo–Wymiarki Polana, 2 -Wymiarki Polana–Limierczyki Polana, 3 - Limierczyki Polana–Szopka Przełęcz, 4 - Szopka Przełęcz–Trzy Korony, 5 - Trzy Korony–Koszarzyska Polana, 6 - Koszarzyska Polana–Limierczyki Polana

Source: authors' own work

5. CONCLUSION

In recent years the number of visitors to the PNP in the summer season has remained similar. The measurements of tourists taken in 2007-10 indicate that the highest intensity values still occur on the same sections Szopka Przełęcz–Trzy Korony and Wymiarki Polana–Limierczyki Polana. The lowest values are noted in the western part of the park.

On the busiest routes of PNP, tourism carrying capacity is exceeded several times over which may bring about negative changes in the natural environment. The most common negative effects include trampling and affecting the properties of soil cover. Such changes in mountain regions may result in increased surface runoff and in the development of erosive processes (FIDELUS 2008, GORCZYCA & KRZEMIENI 2006, KASPRZAK 2010, KRZEMIENI 1997). Increased tourism may also frighten away birds and push animal life away into the depths of the Park (MIKA 2005).

The high intensity of tourists on tourism trails may also negatively affect the reception of the landscape, and disappoint tourists. These effects may lead to a clash between preserving the value and protecting of natural resources, and tourism in the area of the Pieniny National Park (PTASZYCKA-JACKOWSKA 2005).

FOOTNOTES

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