

HIKING TRAILS FOR TOURISTS IN THE "CHEŁMY" LANDSCAPE PARK – ASSESSMENT OF THEIR ROUTE AND INFRASTRUCTURE DEVELOPMENT

Hiking trails for tourists in the "Chełmy" Landscape Park

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Abstract

Introduction. The objective of the work was to assess the development of hiking trails for tourists and their infrastructure in the "Chełmy" Landscape Park in Lower Silesia. **Material and methods.** The analysis concerned a network of tourist trails whose coherence and shape were evaluated based on the indices derived from the graph theory. Also the correspondence between the names given to some trails with the tourist attractions accessible via such trails was assessed, and their number was compared to the length of the relevant trails. The analysis of the development of infrastructure for hiking tourists was conducted based on the results of local stocktaking and determination of tourist traffic density. **Results.** The obtained results show that the network of trails across the Park is quite well developed and coherent, despite the diversity of infrastructural development. The correspondence between the names of trails with their tourist attractions was confirmed with some reservations. **Conclusions.** Diverse trails in the studied area should be integrated into a coherent network by their similar development level, and in particular by introducing uniform marking standards. It would be also worth providing better access to some attractions for hiking tourists by introducing appropriate access routes.

Key words: hiking trails for tourists, trail network, graphs, infrastructural development of trails

Introduction

The "Chełmy" Landscape Park was established in 1992 [1]. It protects an eastern part of the Kaczawa Foothills (*Pogórze Kaczawskie*) in the Western Sudetes. It covers an area of 159.9 km² and its buffer zone additional 124.7 km² [2]. For the most part elevated at 350-400 m a.s.l., although the highest points at 450 m a.s.l., this area belongs to uplands in hypsometric terms. Mszana (475 m a.s.l.) in the Muchowskie Heights (*Muchowskie Wzgórze*) is the highest elevation in the Park, while other distinctive peaks include Rosocha (464 m a.s.l.), Czartowska Skała (463 m a.s.l.), Dębica (463 m a.s.l.) and Górzec (445 m a.s.l.) which have excellent potential for tourism development. The distinctive features of the "Chełmy" Landscape Park [2]:

- flat planation surfaces at 300 m a.s.l. with multitudinous segmented and flat-bottomed small valleys,
- deep V-shaped valleys which can often be characterised as antecedent valleys,
- basalt monadnocks (basalt is more weatherproof than the surrounding rock),
- morphological escarpment of the Sudetes located on the Sudeten Marginal Fault (*Sudecki Uskok Brzeżny*) and running along the north-eastern border of the Park. On average, the escarpment is about 60 m high, while the greatest absolute height – more than 150 m – has been determined near Górzec.

Both the volcanic monadnocks and the escarpment of the Sudetes, which separates the mountainous region and the lowlands of Lower Silesia, have distinctive educational values and

afford extraordinary views, and thus belong to highly valuable landscape components of this area. Also the aforementioned antecedent valleys and forests covering more than half of the Park's area. It is one of the best preserved areas in the Sudetes and provide habitat for many rare flora and fauna species [2].

There are 12 ordinary hiking trails marked with standard signs consisting of three stripes (a horizontal colour stripe between two white stripes), the total length of which is 106.9 km (Tab. 1), across the "Chełmy" Landscape Park. They are maintained by the PTTK¹ Jawor. In addition to these trails, there are 7 educational trails (total length: 44 km) and a few local trails marked with diverse signs, designed by local authorities and non-governmental organisations. These trails are generally not properly maintained and unsatisfactorily interlinked with the ordinary trails which presents serious problems as not infrequently they provide the only way to reach major tourist attractions. The signs are seldom renewed, as a rule there are no signposts, sometimes the trails are not shown on any maps, and as a result they are rarely frequented and fade into oblivion.

The objective of this paper was to carry out an assessment of the network of hiking trails marked in the "Chełmy" Landscape Park in terms of their location and management.

¹ PTTK – Polish Tourist and Sightseeing Society

Table 1. Hiking trails for tourists marked with stripe signs in the “Chełmy” Landscape Park

Trail colour and name (if any)	Route and distance in kilometres in the “Chełmy” Landscape Park
Red, Escarpment Route (a.k.a. Rim Route)	Bolków – Świny – Swarna – Popielowa – Kwietniki – Grobla – foot of Radogost – Bazaltowa Góra – Wzgórze Rataj – Myślubórz – Jeżyków – Górzec – Bogaczów – slope of Diabelska Góra – Jaworska Góra – Stanisławów – former mine “Wapień Niecki Leszczyny” – Leszczyna – Kawki – Złotoryja (31.2)
Yellow, Route of Extinct Volcanoes	Jawor – Wzgórze Rataj – Myślubórz – Reserve Wąwóz Myśluborski – Myślubów – Myślubówek – Czartowska Skała – Pomocne – Kondratów – Gozdno – Organy Wielisławskie – Sędziszowa (20.0)
Green, Route of Nysa Mała Valley	Grobla – Wąwóz Grobla – Siedmica – Wąwóz Siedmica – Ruski Most – Mały Wąwóz Siedmicy – Muchów (9.6)
Green	Złotoryja – Krucze Skały – Wilków – Wilków Osiedle – Prusicka Góra – Leszczyna – Olszynka – Prusice Dolne – Prusice – Rokitnica (5.1)
Green	Wilczyce – ... – Męcinka – Droga Kalwaryjska – Górzec (1.8)
Blue	Wojcieszów – ... – Lipa – Nowowiejski Las – Wąwóz Lipa – Nowa Wieś Wielka – Ruski Most – Młodawa – Myślubów – Jeżyków (10.8)
Blue, Route of Diggers	Droga Kalwaryjska – Bogaczów – Sichów – Sichowskie Wzgórze – Stanisławów – former mine “Wapień Niecki Leszczyny” (12.8)
Black	Podnóże Prusickiej Góry – former mine “Wapień Niecki Leszczyny” – Kondratów (5.0)
Black	Prusice Dolne – Sichowskie Wzgórze (2.4)
Black	Reserve Wąwóz Myśluborski (West end) – Młodawa (1.6)
Black	Reserve Wąwóz Myśluborski (East end) – Jakuszowa – Siedmica (3.2)
Black	Muchów – Nowowiejski Forest (3.4)

Note: The sections outside the “Chełmy” Landscape Park are shown in *italics*.

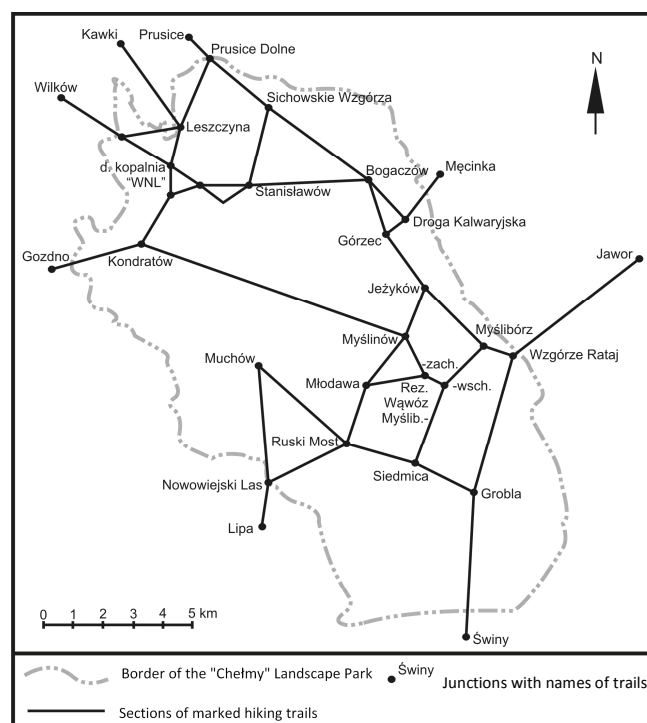
Material and methods

The assessment of the hiking trails in the “Chełmy” Landscape Park was based on the results of local stocktaking carried out in summer and autumn 2010 which aimed at evaluating the location, marking and other aspects of management of the designed trails. Tourist maps of the studied area were also used during desk studies.

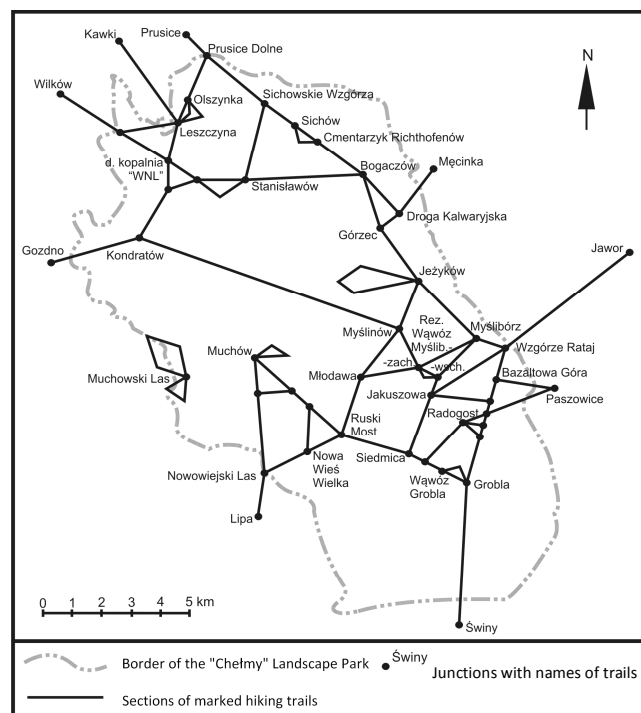
The key parameters of the hiking trails in the “Chełmy” Landscape Park, i.e. their coherence, were determined based on the indices sourced from the graph theory, while assuming that each junction of trails is represented by a vertex of a planar graph, and the sections between the junctions – by edges (excluding the case when two trails overlap). Following the example of Styperek [3], who performed a similar analysis for hiking trails in Polish national parks, the following indices were used [4]:

- Kansky index $\beta = e/v$, where e – number of edges, v – number of vertices (the higher the value of β , the more coherent the network of trails),
- Kansky index $\gamma = e/(3 \cdot (v-2))$ (the ratio of the existing number of edges to the maximum possible number of edges resulting from the number of vertices; the values of this index range from 0 for total incoherence to 1 when all possible edges are present),
- index $\alpha = \mu/(2v-5)$, where μ is a cyclomatic number calculated based on the equation $\mu = e - v + p$, where p is the number of isolated subgraphs.

The analysis was first carried out for the primary network of ordinary trails marked with stripe signs (Fig. 1), and then for all trails in the studied area, including any local and educational trails (Fig. 2). The objective of the analysis was to show that the latter group of trails – apart from providing access to a number of tourist attractions – increases to a significant extent the coherence of the network and should be included into a uniform system of trails in the studied area which would promote penetration of the Park by tourists.



Note: The diagram shows the names of only those junctions which can be explicitly specified.

Figure 1. Diagram of the hiking trails marked in the “Chełmy” Landscape Park, including only ordinary trails marked with standard stripe signs

Note: The diagram shows the names of only those junctions which can be explicitly specified.

Figure 2. Diagram of the hiking trails marked in the “Chełmy” Landscape Park, including ordinary trails marked with standard stripe signs, local and educational trails

Following the example of Fedyk [5], an analysis of correspondence between the names assigned to some trails and the attractions accessible via such trails was conducted. To this end the specific sections of trails were assigned with tourist attractions related to their names. A tourist attraction was taken in the broadest sense of the term and comprised all and any places and objects which have physical manifestation in the landscape and can directly or indirectly be related to the trail's name and thus attract interest of tourists. The analysis included the relation between the length of the studied trails and the number of the above-described attractions.

The analysis of infrastructure development of hiking trails was performed based on the method applied by Sewerniak [6, 7]. This author noticed that the development of a trail depends, first and foremost, on the profile and functions of specific trails and on the attractiveness of the relevant area for tourists as relatively high degree of infrastructure development is desirable in the case of less attractive areas, while in other areas lack of infrastructure can be considered an aspect that holds attraction for tourists [6]. However, as noted by Werner [8], lack of infrastructure development often reduces the value of certain areas and trails with attractions of tourist value in terms of tourist attendance, while providing them with appropriate infrastructure can create new opportunities for tourism development. On the other hand, the problem is that a multitude of popular trails across attractive areas has overly developed infrastructure which in consequence undermines their attractiveness.

The initial stage of the development assessment of trails should include a detailed listing, and then classification of all types of infrastructure which can be found along marked trails.

The tools recommended by Sewerniak [6] can be considered questionable due to some anachronisms related to the period when this classification was developed and extremely strict rules regarding the positioning of devices in a manner which is to an insignificant extent related to the profile a trail, density of tourist traffic and attractiveness of the relevant area. Even Sewerniak has noticed that it would be particularly difficult to define any specific rules in this case, and the distances between the devices depend on terrain conditions [7]. Nonetheless, this classification has seemed to offer the most complete categorisation thus far and will be applied in this paper. The assessment was only carried out for the southern part of the "Chełmy" Landscape Park. It included the determination of density of specific groups of devices in different parts of the network.

Results and discussion

The values of all above-listed indices of the graph theory, determined for both ordinary trails marked with stripe signs (Fig. 1) and for the network comprised of all trails in the studied area, including local and educational trails (Fig. 2), are specified in Table 2. These data explicitly show that the local and educational trails contribute to a significant extent to the coherence of the network of trails as β increases from 1.31, when any such trails are excluded from the calculations, up to 1.59, when they are included. It is also worth comparing the obtained values of β with the results of the calculations made by Styperek [3] for Polish national parks. While the results for the first option correspond to the values obtained for national parks showing the greatest coherence of the network ($\beta \geq 1.32$)², then those for the

second option exceed the value for the Stołowe Mountains National Park with the most coherent network of trails ($\beta = 1.42$). These figures indicate a substantial degree of development of the trail network in the "Chełmy" Landscape Park which clearly reflects the trends in providing access to protected areas. Even though the protection requirements restrict the development of hiking tourism in national parks, and excessive expansion of the trail network is not desirable there, in landscape parks hiking tourism can develop basically without limitations. The values of the other indices are also higher when all trails are included and this is a promising sign of good degree of development of the network compared to the values for national parks.

Table 2. Coherence indices for the network of hiking trails in the "Chełmy" Landscape Park

Index	Indices for the network of only ordinary trails marked with standard stripe signs	Indices for the network of ordinary trails marked with stripe signs, local and educational trails
Number of vertices (v)	32	49
Number of edges (e)	42	78
Kansky index β	1.31	1.59
Kansky index γ	0.47	0.55
Cyclomatic number (μ)	11	31
Index α	0.19	0.33

When analysing the shape of the trail network (Fig. 1 and 2), two distinctive areas of trail concentration can be distinguished in the northern and central part of the Park, interlinked with only two sections. It seriously inconveniences tourists in moving between the two concentrations of tourist attractions near Leszczyna and Stanisławów, and Myślibórz and Grobla. Although the area located between the two trail clusters is less attractive for tourists, there are no reasons (wetlands, rivers without crossing points, enclosed areas) why it would be impossible to design additional trail sections there to link e.g. Muchów and Kondratów, Stanisławów, Górzec or Jeżyków. The two detour local trails, situated further apart, in the Muchowski Forest (*Las Muchowski*) should also be noted. Although they are designed for motorised tourists (they start at the forest car park), they can be integrated in a number of ways into the network which would enable their better use. Also the poor integration of the trail network in the Park with the neighbouring areas, which most often have a certain potential for tourism development, seems to be another problem. There are few linking trails between the Park and the Jaworska Plain (*Równina Jaworska*) and Chojnowska Plateau (*Wysoczyzna Chojnowska*) which can be considered a potential source of tourists, and at the same time have distinctive anthropogenic landscape values (Jawor, Słup, Winnica, Krotoszyce, Dunino), and the Kaczawa Valley (*Dolina Kaczawy*) and Świerzawa Depression (*Obniżenie Świerzawy*) with natural beauty (Organs of Wielisław (*Organy Wielisławskie*) and Wielisławska Cave (*Jaskinia Wielisławska*)) and anthropogenic sites of interest (Świerzawa, Dobków). The poor integration with the region of Bolków is attributable to the negligible development of trails in the southern part of the Park where only one route has been marked.

Based on the known values α and γ the network of trails in the "Chełmy" Landscape Park can be classified according to the types of network shapes proposed by Taafee and Gauthier (Fig. 3). This classification was carried out for Polish national parks by Styperek [3] who additionally named a transitional system between the core and lattice systems, called a core-lattice design. In this case the values of γ correspond to the core system, and the values of α – to the lattice system. In accordance with this classification, the network of ordinary trails marked with stripe signs

² The respective values in descending order are as follows [3]: Stołowe Mountains National Park $\beta = 1.42$; Karkonosze National Park $\beta = 1.38$; Kampinos National Park $\beta = 1.37$; Pieniny National Park $\beta = 1.36$; Tatra National Park $\beta = 1.32$.

in the “Chełmy” Landscape Park should be defined as the core-lattice system, while the network of all trails as the lattice system, which is another argument supporting its coherence.

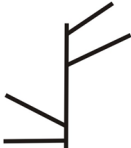
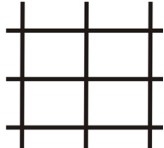
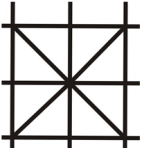
Core systems	Lattice systems	Delta systems
		
$1/3 \leq \gamma \leq 1/2; v \geq 4$ $\alpha = 0$	$1/2 \leq \gamma \leq 2/3; v \geq 4$ $0 < \alpha < 1/2; v \geq 3$	$2/3 \leq \gamma \leq 1; v \geq 3$ $1/2 < \alpha < 1; v \geq 3$

Figure 3. Classification of network shapes according to the value of graph indices [quoted after 3]

In the “Chełmy” Landscape Park there are four hiking trails given their own name. An important problem that transpired in the analysis of correspondence between their names and the tourist attractions accessible by such trails is the fact that in a number of cases the trails were designed near notable attractions, relevant to the names given to specific trails, although the trails do not lead directly to such objects, and there are no signposts or information boards. As a result, tourists have to know about such object, its approximate location and finally deviate from the trail to find a suitable access way in order to visit a specific tourist attraction.

The Escarpment Route (*Szlak Krawędziowy*), also known as the Rim Trail (*Szlak Brzeżny*), is the longest trail in the studied landscape park. It links Bolków and Złotoryja (Tab. 1). As its name would suggest, it should provide access to attractions related to the morphologic escarpment of the Sudetes located on the Sudeten Marginal Fault, that is a steep slope of up to 150 m of relative height, and views spreading from these slopes and the top of the escarpment across the lower altitudes of the Sudeten foothills and the Silesian-Lusatian Lowland. This trail does not stretch out down its full length along the escarpment. However, it does in its most part, i.e. from the foot of Radogost to the area of Diabelska Mountain (*Diabelska Góra*) and subsequently near Leszczyna. The other sections of the trail lead deep into the Kaczawa Foothills. A panoramic view of the areas at the foot of the morphologic escarpment of the Sudetes can be admired from several places which are mainly located in the southern part of the trail (near Kwietniki, the slope of Radogost, at the foot of the Rataj Hill (*Wzgórze Rataj*), the section between Myślibórz and Jeżyków). Views are much less spectacular north of Jeżyków as the trail runs across the forest.

Thus, the Escarpment Route gives access to a number of attractions related to its name, but it does not make the most of the area. It does not lead to at least two attractions situated in its vicinity, even though such trail could be routed without any problems. The first attraction is the view tower on Radogost which affords a beautiful panoramic view of the Western Sudetes, part of the Eastern Sudetes, the Sudeten Foothills and the Silesian-Lusatian Lowland. The red trail runs across the slopes of this elevation, while the summit can be reached following two access trails marked with red triangles edged in white. However, there are no signposts and the small signs marking the trails are only put up at a certain distance to the main trail. Consequently, supposing tourists can see the sign of the access trail, they will not know where it leads (a similar situation faces the tourists wishing to reach the Hermit Grotto (*Grota Pustelnika*) in the Paszówka valley). It is additionally confusing that the two access trails run along each other at a distance of about 100 m and then converge ahead of the summit. In addition, Radogost can also be

reached via the educational trail “Nad Groblą” and a local trail from Paszowice. It is also unclear why they are one-way trails. A similar situation can be found on the Bazaltowa Mountain (*Bazaltowa Góra*) where the Escarpment Route goes around the summit featuring a out-look spot with a magnificent view of Paszowice, Strzegomskie Hills (*Wzgórze Strzegomskie*) and the Ślęza Massif (*Masyw Ślęży*) (view from the historical view tower on the same summit is unfortunately obstructed by trees). The out-look spot can only be reached via an educational trail from Paszowice, although the red trail could have been designed along the same or similar route.

Highly unclear is the route of the Escarpment Route and another trail – named the Route of Extinct Volcanoes (*Szlak Wygasłych Wulkanów*) – in the vicinity of the Myśliborskie Minor Organs (*Małe Organy Myśliborskie*) that is a basalt volcanic plug created as a result of the Tertiary volcanic activity related to the emergence of the Sudeten Marginal Fault. Tourists are confused as the route of the trails has been changed several times. At one time both trails led directly to this nature monument, while at other times – only an access trail was marked there. Unfortunately, the signs marking both these trails have not been removed, and therefore, considering that there are no signposts, it is difficult to reach the destination as well as to find one’s way to continue the walk.

The yellow Route of Extinct Volcanoes across the “Chełmy” Landscape Park provides access to another volcanic plug, i.e. the Devil’s Rock (*Czartowska Skala*), and therefore its name is justified on the relevant section. However, it should be mentioned that there are also other attractions in its neighbourhood, e.g. basalt pillars on the Muchowskie Hills (*Muchowskie Wzgórze*) which could be easily reached via a trail marked here.

The third trail named after a tourist attraction across the studied area is the blue Route of Diggers (*Szlak Kopaczy*) which shows the way from the foot of Górzec through Bogaczów, Sichów and Stanisławów to the crystalline limestone mines, including the former mine “Wapień Niecki Leszczyny” (Tab. 1). Over the entire length of the trail, it provides access to the attractions related to its name only in the vicinity of Stanisławów and the above-mentioned mine. Tourists approaching from Sichów first go past an old adit in the Sichowianka valley, and then the former iron ore mine “Wilcza” and finally the mining area of dolomitic limestone and the related lime kilns. Unfortunately, it does not show the direct way to all adits and mining pits, and it also was not taken to the closed barite mine situated south of Stanisławów. The rest of the blue trail does not provide access to any mining attractions, and therefore there is no reason why it should be named as it is shown on maps.

The name of the green Route of Nysa Mała Valley (*Szlak Doliną Nysy Małej*) is also rather doubtful. The route stretches along the Nysa Mała river only the short length from the Grobla village to the central part of the reserve “Wąwóz Grobla” (*Grobla Gorge*) (1.5 km). Further on it goes along Młynówka, a left tributary of Nysa Mała which has created other antecedent valleys – the Siedmica Gorge (*Wąwóz Siedmica*) and Siedmica Minor Gorge (*Mały Wąwóz Siedmicy*). Thus, it would be more reasonable to name it the Route of Gorges.

While analysing the named routes, it is also worth mentioning educational trails. There are seven such trails across the Park: “Synklina Leszczyny” (*Syncline of Leszczyny*) (3.5 km long, 17 observation stations), “Śladami Kopaczy” (*Following the Diggers*) (5 km long, 5 stations), “Wąwóz Myśliborski” (*Myśliborski Gorge*) (4.5 km long, 12 stations), “Wędrowanie po wulkanie” (*Walking the Volcano*) from Paszowice to the Bazaltowa Mountain (10 km long, 6 stations), “Nad Groblą” (7.5 km long), “Las Świniec” (*Świniec Forest*) south of Muchów (4.5 km long) and “Szlakiem Trzech Wąwózów” (*Route of Three Gorges*) near Nowa Wieś

Wielka (9 km). These detour trails have been routed to specific attractions, and therefore their names seems to be reasonable. For example, the first of the above-listed trails shows the geologic structure of the area and history of the local mining and metallurgical industry. It shows e.g. the profile of Zechstein rocks, limestone and sandstone quarries as well as to the remnants of the steelwork and mine "Ciche Szczęście" [9], while the second trail gives access to the relicts of mining industry and reveals the geologic structure with abundantly mineralised veins. However, the development of some of these trails is rather decidedly questionable, in particular sparsely installed information boards or total lack thereof (as discussed below).

The analysis of tourist infrastructure development was only conducted for the southern part of the "Chełmy" Landscape Park according to specific types of infrastructure. Information about the trail is provided using equipment of various quality and type. The trails with stripe signs are generally well marked, and there are usually signposts at their junctions, although there is still a lot room for improvement in this aspect. The local and educational trails are rather poorly organised when compared to the above as their signs are not renewed as frequently as they should be and usually they have no signposts, particularly important at junctions with the ordinary trails. The educational trail from Paszowice to Bazaltowa Mountain is a remarkable exception here as it is well marked, has signposts and information boards, still a one-way trail – a solution which is now phased out. As the reserve "Wąwóz Myśluborski" (*Myśluborski Gorge*) has been closed to tourists, a detour has been made to bypass the yellow trail. And taking the educational trail from Myślubórz so as to read all information boards is now no longer possible. The educational trail from Grobla to Radogost, a one-way trail with no signposts and information boards, seems to be the most questionable one.³ Furthermore, the section across the reserve "Wąwóz Grobla" (*Grobla Gorge*) has over some distance no signs, and in other places signs are only partially finished. It seems that this trail was created at the same time as the relatively new reserve and at the moment of its establishment, due to legal restrictions, it was not possible to design an educational trail. However, the route of the trail was not changed and any further efforts aimed at installing signs were abandoned, and as a result it has become basically useless. In the southern part of the "Chełmy" Landscape Park, there are only information boards at educational trails ("Wąwóz Myśluborski" (*Myśluborski Gorge*), "Wędrowanie po wulkanie" (*Walking the Volcano*) and "Szlakiem Trzech Wąwózów" (*Route of Three Gorges*), and their insufficient number affects also other trails, even though they feature such notable attractions as reserves in antecedent valleys (the gorges: Lipa, Siedmica and Grobla) or historical heritage objects (Jakuszowa, Grobla, Kłonice).

There is evidently no regularity to the designation of resting places in the studied area. There is a large accumulation of such places in the Jawornik valley, over Myślubórz, which is understandable as it is a popular destination of one-day trips. Benches are placed all along the educational trail to the reserve "Wąwóz Myśluborski" (*Myśluborski Gorge*), in addition a recreational area "Słoneczna Łąka" with benches, shelters and bonfire places has been created near the car park in Myślubórz. There are also benches and a shelter near the above-mentioned trail from Paszowice to Bazaltowa Mountain. Resting places with benches and shelters can also be found at the western end of the Grobla Gorge (*Wąwóz Grobla*) and between the Siedmica Gorge and the Siedmica Minor Gorge, however their number is insufficient, bearing in mind the level of difficulty of the trails across gorges

(numerous passages over streams, waterlogged areas, missing trail), and at the same time the large potential of these attractions. On the other hand, there is a need for properly prepared resting places near the reserve "Wąwóz Lipa" (*Linden Gorge*), on Radogost and in the most southern part of the Park on the red trail (there is only one such place in hardly favourable location at the national road no. 3). All resting places are provided with dustbins, however, their regular emptying poses – apart from the Myśluborski Gorge – a problem.

There are no tourist hostels across the entire "Chełmy" Landscape Park. Aside from pensions and private lodgings, accommodation facilities for hiking tourists comprise only three self-service shelters: "Chatka Puchatka" (*House at Pooh Corner*) in Grobla (near the trail junction), "Chatka pod Lipą" (*House at Linden Corner*) in Raczyce near Jeżyków (near the educational trail "Szlakiem Kopaczy" (*Following the Diggers*) and "Marianówka" towards Rosocha near Stanisławów (near the Escarpment Route). It is also possible to put up a tent near the shelters, just as by the Centre of Ecological Education "Salamandra" in Myślubórz. However, the shelters are rather far away from the main tourist trails (from several dozen meters in the case of "Chatka Puchatka" up to several hundred meters to the other two objects) with poorly marked access paths. The advantages include regular distribution of shelters along the Escarpment Route, the longest route in the Park which enables dividing the trip into four stages. As there are no hostels and other generally available tourist facilities, open all year long, no sanitary facilities are provided in the "Chełmy" Landscape Park, either.

Tourist attractions are also to a various degree adapted for visitors. The route across the Myśluborski Gorge is a wide comfortable trail, suitable for people in wheelchairs, while the trail across the Siedmica Gorge or the Siedmica Minor Gorge takes tourists several times to ford streams, and sometimes the trail vanishes into bushes, and some stretches of the Siedmica Minor Gorge or the Linden Gorge require tourists to walk the stream bed. However, it should be noted that this makes them even more attractive. Views can be admired from the view tower on Radogost and out-look spot on the Bazaltowa Mountain provided with barriers, a bench and an information board.

Summary

Diverse trails in the studied area should be integrated into a coherent network by their similar development, and in particular by introducing uniform marking standards. It also would be worth providing better access to some attractions for hiking tourists by way of appropriate access routes.

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³ This trail has been classified into the group of educational trails solely due to its marking (white square with a green diagonal) which is generally used for marking educational trails.

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