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**The Current State and Perspectives of Development of Tourism Products in Roztocze in the Context of Environmental and Educational Tourism**

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**THE CURRENT STATE AND PERSPECTIVES  
OF DEVELOPMENT OF TOURISM PRODUCTS  
IN ROZTOCZE IN THE CONTEXT OF ENVIRONMENTAL  
AND EDUCATIONAL TOURISM**

**Abstract**

The unique environmental heritage of Roztocze provides a superb basis for the development of environmental and educational tourism. Only several products in this scope currently exist in the region. This paper presents the existing and currently prepared offer of environmental and educational tourism in Roztocze. The study is based on sources of indirect and direct data. The level of tourism traffic in one of the most important tourism products, namely the Roztocze National Park, is presented based on data from the years 2006–2010 (quantitative and qualitative monitoring). The analysis also aims at the assessment of new products in Roztocze, with particular consideration of geotourism products. The results indicate that, in most of the analyzed tourism objects/attractions does not have all the components of the tourism product. Only some of them generate funds for the nature conservation and impact on local economic development. Despite this, they are a good starting point for the development of a full, integrated offer. As more and more such products are perceived by local governments, state institutions and local communities as an opportunity to diversify of the existing educational nature offer.

**Keywords:** tourism product, environmental tourism, education, Roztocze

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## Introduction

According to the estimations of the World Travel and Tourism Council,<sup>1</sup> the travel and tourism sector generates approximately 9-10% of the global GDP. One of the fastest developing forms of tourism is environmental tourism.<sup>2</sup> Stueve et al.<sup>3</sup> estimate that in 2005, natural areas and their closely related local cultural and recreational resources accounted for approximately half of the revenues from business activities attributed to the tourism sector. Environmental tourism is the basis of “export” in 83% of developing countries.<sup>4</sup> It is commonly believed that in spite of lack of detailed statistics and data, tourism based on natural resources<sup>5</sup> is capable of generating considerable funds for both nature protection and local economic growth.<sup>6</sup> Environmental tourism particularly develops in natural conditions, with emphasis on promoting awareness in the scope of protection of the natural environment.<sup>7</sup> It can have various forms, from passive (enjoying views, painting) to active (rafting, mountain biking), and from consumption-oriented (angling, hunting) to non-consumption-oriented (trekking, bird watching). New forms of environmental tourism increasingly popular over the last

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<sup>1</sup> *The global travel and tourism summit*, World Travel and Tourism Council, London 2007.

<sup>2</sup> H.J. Goodwin, *In pursuit of ecotourism*, “Biodiversity and Conservation” 1996, 5, pp. 277–291; L. Mastny, *Treading lightly: new paths for international tourism*, Worldwatch Institute, Washington 2001, pp. 9–17; L. Davenport, W.Y. Brockelman, P.C. Wright, K. Ruf, F.B. Rubio del Valle, *Ecotourism tools for parks*, in: *Making parks work*, J. Terborgh, C. van Schaik, L. Davenport, M. Rao (eds.), Island Press, Washington D.C. 2002, pp. 279–306.

<sup>3</sup> A.M. Stueve, S.D. Cock, D. Drew, *The Geotourism Study: Phase 1 Executive Summary*, Travel Industry Association of America, Washington DC 2002, Related online version (cited on 6 November 2006): <http://www.tia.org/pubs/geotourismphasefinal.pdf>.

<sup>4</sup> L. Mastny, *Treading lightly: new paths for international tourism*, Worldwatch Institute, Washington 2001, pp. 9–17.

<sup>5</sup> *Millennium Ecosystem Assessment. Ecosystems and human wellbeing: biodiversity synthesis*, World Resources Institute, Washington D.C. 2005, p. 155.

<sup>6</sup> H.J. Goodwin, *In pursuit of ecotourism*, “Biodiversity and Conservation” 1996, 5, pp. 277–291; E. Boo, *Ecotourism: the potentials and pitfalls*, World Wildlife Fund, Washington D.C. 1990, pp. 1–72; S. Gosling, *Ecotourism: a means to safeguard biodiversity and ecosystem functions?* “Ecological Economics” 1999, 29, pp. 303–320.

<sup>7</sup> D. Newsome, S.A. Moore, R.K. Dowling, *Natural area tourism: Ecology, impacts and management*, Clevedon, Channel View Publications, Buffalo 2002, p. 340.

several years include among others ecotourism, forest tourism, and geotourism (tourism related to geology and landscape).<sup>8</sup>

In many regions, tourism based on natural resources contributes to an increased economic growth as well as social awareness at the local and global scale.<sup>9</sup> Environmental tourism is frequently treated as a profitable supplement or alternative to agriculture, forestry, and fishery. It is increasingly perceived as an opportunity to diversify lifestyle in rural areas.<sup>10</sup> Roztocze is a region with agricultural character and exceptional landscape values.

The existing offer of Roztocze in the scope of environmental and educational tourism, and the possibilities of its use and development, are the primary subject of this paper. Therefore gives rise to the following research questions: to what extent tourism objects/products do fulfil the criteria of the tourism product given by J. Kaczmarek et al.,<sup>11</sup> or V.T.C. Middleton?,<sup>12</sup> how tourism, based on natural resources, generates funds for the nature conservation, and how this influence the local economic development? The analysis of the issue was based on indirect and direct data sources. At the first stage, involving desk research, secondary data sources were used (related literature, strategic documents, records and registers, promotional materials, and websites). A description (combined with other methods, including screening, historical analysis, and development possibilities analysis) of the conditions of development and functioning of tourism products based on natural resources was provided. The final stage applied direct sources of data obtained as a result of field research and interviews with organisers of the products.

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<sup>8</sup> E. Halpenny, N.R. Otte, *Not just nature*, "Our Planet" 1999(10.1). Related online version (cited on 5 November 2006): <http://www.ourplanet.com/imgversn/101/otte.html>; *Forest Tourism And Recreation. Case Studies in Environmental Management*, X. Font, J. Tribe (eds.), University Press, Cambridge 2000, p. 1–34; S. Bell, L. Tyrväinen, T. Sievänen, U. Pröbstl, M. Simpson, *Outdoor recreation and nature tourism: a European perspective*, "Living Reviews in Landscape Research" 2007, 1(2), pp. 1–46; *Geotourism: The tourism of geology and landscape*, D. Newsome, R. Dowling (eds.), Goodfellow Publishers, Oxford 2010, pp. 4–5.

<sup>9</sup> R. Buckley, J. Robinson, J. Carmody, N. King, *Monitoring for management of conservation and recreation in Australian protected areas*, "Biodivers. Conserv." 2008, 17, pp. 3589–3606.

<sup>10</sup> L. Tyrväinen, I. Nousiainen, H. Silvennoinen, L. Tahvanainen, *Rural Tourism in Finland: Tourists' Expectation of Landscape and Environment*, "Scandinavian Journal of Hospitality and Tourism Research" 2001, 1(2): 133–149, doi:10.1080/150222501317244047.

<sup>11</sup> J. Kaczmarek, A. Stasiak, B. Włodarczyk, *Produkt turystyczny*, PWE, Warszawa 2010, pp. 75–76.

<sup>12</sup> V.T.C. Middleton, *Marketing w turystyce*, Polska Agencja Promocji Turystyki, Warszawa 1996, p. 89.

The popularity of one of the products in Roztocze is manifested in results of a study on tourism traffic in the Roztocze National Park. Data from four measurement sites/objects were considered (a parking lot at the Education-Museum Centre, Bukowa Góra, Florianka, and Echo Ponds). The results of the research permitted the analysis of the phenomenon in the daily, monthly, and seasonal scale.

## 1. Description of the study area

Roztocze is distinguished from the remaining areas of central-eastern Poland by constituting a belt of elevations and plateaus with a NW-SE orientation. Absolute heights vary from 280 m a.s.l. in the north-western part to approximately 395.0 m a.s.l. (Wielki Dział, Krągły Goraj) in the south-eastern part. The features of the geological structure and substantial hypsometric variability constitute the basis for the area's division (in the territory of Poland) into sub-regions: West Roztocze (Gorajskie and Szczebrzeszyńskie), Middle Roztocze (Tomaszowskie), and East Roztocze (Rawskie).

In administrative terms, Roztocze occupies areas belonging to six districts of the Lublin Province (Kraśnicki, Janowski, Lubelski, Biłgorajski, Zamojski, and Tomaszowski), and one district (Lubaczowski) of the Podkarpackie Province. The area of Roztocze includes land belonging to a total of 27 communes. The assessment of tourism attractiveness with the application of multi-dimensional comparative analysis<sup>13</sup> classified 21 of the communes as “very attractive” and “attractive”.

The value of Roztocze in terms of development of educational environmental tourism is determined by the features of its geological structure<sup>14</sup> and climatic conditions,<sup>15</sup> water phenomena,<sup>16</sup> and organic environment. Outcrops, excava-

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<sup>13</sup> A. Tucki, *Potencjał turystyczny regionu lubelskiego*, “Annales UMCS” 2009, B, 64, issue. 1, pp. 11–31.

<sup>14</sup> T. Brzezińska-Wójcik, M. Harasimiuk, *Natural environment of the Roztocze region*, w: *Cultural Landscapes of the Lublin Upland and Roztocze*, E. Skowronek, W. Wołoszyn, T. Speck, K.M. Born (eds.), Kartpol s.c., Lublin 2006, pp. 59–80.

<sup>15</sup> B. Kaszewski, *Klimat*, in: *Środowisko Przyrodnicze Lubelszczyzny*, S. Uziak, R. Turski (eds.), Lubelskie Towarzystwo Naukowe, Lublin 2008, pp. 75–111.

<sup>16</sup> Z. Michalczyk, T. Wilgat, *Wody*, in: *Środowisko przyrodnicze Lubelszczyzny*, S. Uziak, R. Turski (eds.), Lubelskie Towarzystwo Naukowe, Lublin 2008, pp. 113–210.

tions, and quarries, or more generally geosites, are unique geotourism attractions. Five types of geosites are distinguished in Roztocze: stratigraphic (Phanerozoic), palaeobiological, palaeoenvironmental (Brusno, Huta Różaniecka, Józefów, Łysaków, Nowiny, Żelebsko), geomorphological, and tectonic (waterfalls in river channels). They are included in the Polish central register.<sup>17</sup> The region's varied vegetal resources, depending on the species composition, have filtration-detoxification, healing, and aesthetic properties in different seasons of the year.<sup>18</sup> Features and objects of the region valuable in environmental terms constitute a basis for a number of forms of legal protection (Natura 2000 network, special protection areas, spatial plans of parks and/or rural parks)<sup>19</sup>. Some of these areas/objects are adapted to the needs of tourism. They include the Roztocze National Park (dominant contribution of forests in the total area – more than 95%), Landscape Parks, and some nature monuments (groups of trees and alleys, rocks, and springs)<sup>20</sup>. All of the forms of nature protection established in the region became the basis for designing the Roztocze International Biosphere Reserve.

Already in the 1960's, in the paper by M.J. Mileska,<sup>21</sup> Roztocze was perceived as a potential recreational-tourist region. In his analysis of recreational areas and towns in Poland, J. Wyrzykowski<sup>22</sup> classified one of sub-regions of Roztocze (West Roztocze/Roztocze Gorajskie) as “very attractive”. The tourist-recreational space of Roztocze was a subject of studies by M. Karolczak<sup>23</sup> and A. Tucki.<sup>24</sup> The assessment of the tourist function of the Krasnobrodzki Landscape Park,

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<sup>17</sup> <http://geostanowiska.pgi.gov.pl/gsap/> (accessed 20.02.2014).

<sup>18</sup> A. Krzymowska-Kostrowicka, *Geoekologia turystyki i wypoczynku*, Wydawnictwo Naukowe PWN, Warszawa 1999, p. 239; D. Fijałkowski, K. Izdebski, *Szata roślinna*, in: *Środowisko przyrodnicze Lubelszczyzny*, S. Uziak, R. Turski (eds.), Lubelskie Towarzystwo Naukowe, Lublin 2008, pp. 317–419.

<sup>19</sup> D. Fijałkowski, M. Kseniak, *Parki wiejskie Lubelszczyzny*, PWN, Warszawa 1982, p. 411.

<sup>20</sup> *Ochrona przyrody i środowiska na Lubelszczyźnie*, D. Fijałkowski (ed.), Lubelskie Towarzystwo Naukowe, Lublin 2003, pp. 1–213.

<sup>21</sup> M.I. Mileska, *Regiony turystyczne Polski. Stan i potencjalne warunki rozwoju*, „Prace Geograficzne PAN” 1963, 43, pp. 1–156.

<sup>22</sup> J. Wyrzykowski, *Geograficzne uwarunkowania rozwoju urlopowej turystyki wypoczynkowej w Polsce*, “Acta Universitatis Wratislaviensis” 1986, 935, *Studia Geograficzne* 44, p. 1–264.

<sup>23</sup> M. Karolczak, *Przestrzeń turystyczno-wypoczynkowa Roztocza*, “Turyzm” 2002, issue 1, pp. 5–36.

<sup>24</sup> A. Tucki, *Formy ochrony przyrody jako element atrakcyjności turystycznej na przykładzie regionu lubelskiego*, “Problemy Ekologii Krajobrazu” 2010, 27, pp. 239–244.

and the tourism management of Roztocze, were presented by M. Garbula.<sup>25</sup> The issue of making the geological heritage of Roztocze available to tourism has also been analysed.<sup>26</sup> The tourism-related use of the Roztocze National Park was discussed by A. Anasiewicz,<sup>27</sup> E. Skowronek et al.,<sup>28</sup> and A. Świeca et al.<sup>29</sup> The authors also analysed the possibilities of development of tourism in Krasnobród<sup>30</sup> and Zwierzyniec.<sup>31</sup>

## 2. Education through environmental tourism

The environmental resources of Roztocze are explored particularly in the scope of *environmental tourism, landscape tourism, geotourism, and forest tourism*.

An extensive review of the concept and definition of *environmental tourism* is presented by S. Graja-Zwolińska and A. Spychała<sup>32</sup> (2013). Travel aimed

<sup>25</sup> M. Garbula, *Zagospodarowanie turystyczne Roztocza*, „Turyzm” 2000, issue 1: 93–109.

<sup>26</sup> T. Brzezińska-Wójcik, A. Świeca, W. Kociuba, *Nature values and tourism development in the Roztocze region*, in: *Przyroda a turystyka we wschodniej Polsce*, M. Żabka, R. Kowalski (eds.), Akademia Podlaska, Siedlce 2007, pp. 13–34; T. Brzezińska-Wójcik, M. Harasimiuk, *Dziedzictwo geologiczne Roztocza – problemy ochrony i udostępnienia turystycznego*, in: *ROZTOCZE – region pogranicza przyrodniczo-kulturowego*, R. Reszel, T. Grabowski (eds.), Roztoczański Park Narodowy, Zwierzyniec 2009, pp. 27–42.

<sup>27</sup> A. Anasiewicz, *Turystyka w Roztoczańskim Parku Narodowym*, in: *Użytkowanie turystyczne parków narodowych*, J. Partyka (ed.), Ojcowski Park Narodowy, Ojców 2002, pp. 333–342.

<sup>28</sup> E. Skowronek, A. Świeca, A. Tucki, R. Krukowska, *The role of National Parks of the Lublin Region for Tourism Development in Polish-Ukrainian Border Areas*, in: *Przyroda a turystyka we wschodniej Polsce*, M. Żabka, R. Kowalski (eds.), Akademia Podlaska, Siedlce 2007, pp. 35–52.

<sup>29</sup> A. Świeca, T. Brzezińska-Wójcik, T. Grabowski, K. Kałamucki, R. Krukowska, A. Tucki, *Turystyka i edukacja w Roztoczańskim Parku Narodowym i w jego otulinie*, in: *Roztoczański Park Narodowy – przyroda i człowiek*, R. Reszel, T. Grądział (eds.), Wyd. RPN, Zwierzyniec 2013, pp. 219–230.

<sup>30</sup> R. Krukowska, *Krasnobród – uzdrowisko i miejscowość wypoczynkowa*, in: *Stan i zmiany środowiska geograficznego wybranych regionów wschodniej Polski*, R. Dobrowolski, S. Terpiłowski (eds.), UMCS 2004, Lublin, pp. 159–163; T. Brzezińska-Wójcik, E. Skowronek, *The tourism potential of Tomaszów Roztocze as exemplified by the urban-rural commune of Krasnobród*, „Annales UMCS” 2009, Lublin, B, 64, 1, pp. 171–199.

<sup>31</sup> R. Krukowska, M.J. Józwiak, *Walory turystyczne Zwierzynca i okolic*, in: *Stan i zmiany środowiska geograficznego wybranych regionów wschodniej Polski*, R. Dobrowolski, S. Terpiłowski (eds.), UMCS, Lublin 2004, pp. 147–152.

<sup>32</sup> S. Graja-Zwolińska, A. Spychała, *What is nature tourism? Case study: university students*, „Turyzm” 2013, 23, 1, pp. 37–45.



at the exploration of environmental values and gaining knowledge on nature and new experiences is referred to as: *nature tourism*, *wildlife tourism*, or *green tourism*.<sup>33</sup> The primary motive of environmental tourism is the exploration, observation, and admiration of nature, and the subject of interest of tourists are areas with exceptional landscape values with unique plant and animal species.

The cognitive motive, frequently combined with educational and recreational objectives, is also dominant in *landscape tourism*. Landscape tourism is currently associated with a non-commercial form of travel involving exploration of the country or region in the scope of trips, rallies (school children, students), and individual treks.<sup>34</sup> From the educational point of view, landscape tourism also contributes to raising awareness of the need of protection of the natural heritage.

The idea of *geotourism*<sup>35</sup> developed based on the concept of tourism involving admiration of living nature. This form of tourism was initially defined by T.A. Hose<sup>36</sup> as “providing tourists with information and facilities due to which, during their visits to attractive places, apart from exclusively aesthetic impressions, tourists can become familiar with knowledge needed to understand the geology and geomorphology of the visited place”. The importance of geotourism is perceived in various ways. An extensive review of definitions was carried out by A. Osadczyk and K. Osadczyk,<sup>37</sup> and P. Migoń<sup>38</sup>. According to the authors, and other cited authors (among others M. Mika,<sup>39</sup> A. Kowalczyk,<sup>40</sup> D. Newsome,

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<sup>33</sup> M. Mika, *Formy turystyki poznawczej*, in: *Turystyka*, W. Kurek (ed.), Wyd. Nauk. PWN, Warszawa 2007, pp. 198–232.

<sup>34</sup> Z. Kruczek, A. Kurek, M. Nowacki, *Krajoznawstwo. Zarys teorii i metodyki*, Wyd. PROKSENIA, Kraków 2003, pp. 1–11.

<sup>35</sup> T. Słomka, A. Kicińska-Świdorska, *Geoturystyka – podstawowe pojęcia*, “Geoturystyka” 2004, 1(1), pp. 1–7.

<sup>36</sup> T.A. Hose, *Geotourism and interpretation*, in: *Geotourism*, R.K. Dowling, D. Newsome (eds.), Butterworth-Heinemann, Oxford 1995, pp. 221–241.

<sup>37</sup> A. Osadczyk, K. Osadczyk, *Szanse i perspektywy rozwoju geoturystyki jako nowej formy postrzegania obiektów przyrody nieożywionej i poznawania zjawisk naturalnych*, in: *Problemy turystyki i rekreacji*, M. Dudkowski (ed.), Vol. 1, Uniw. Szczeciński, Szczecin 2008, pp. 131–141.

<sup>38</sup> P. Migoń, *Geoturystyka*, Wyd. Nauk. PWN, Warszawa 2012, pp. 1–197.

<sup>39</sup> M. Mika, *Formy turystyki poznawczej*, in: *Turystyka*, W. Kurek (ed.), Wyd. Nauk. PWN, Warszawa 2007, pp. 198–232.

<sup>40</sup> A. Kowalczyk, *Turystyka zrównoważona*, Wyd. Nauk. PWN, Warszawa 2010, p. 323.



R. Dowling<sup>41</sup>), geotourism should be understood not merely as “exploring geological objects and processes”,<sup>42</sup> but also in a much broader sense, and a type of tourism at the boundary of environmental and cultural tourism. Understood as such, it also concerns issues related to the excavation of rocks and minerals (mining), their use in architecture, and display in museums, exhibitions, and fares, as well as collecting fossils. The subjects of interest of geotourism, apart from rocks and tectonic structures, minerals, fossils, volcanoes, geothermal phenomena, landforms, caves, waterfalls, well heads, and glaciers, are therefore also former and modern mining objects, architectural monuments made of stone, and cultural landscapes (theme towns/villages, e.g. Austrian Maissau – World of Amethyst).<sup>43</sup>

Forest tourism is a new area of environmental tourism. A number of didactic trails have been established in the Roztocze state forests, including places of rest and recreation (parking lots and camping sites). Recreational centres, ecological education centres, game lodges, and guesthouses have also been established in Roztocze. The possibilities of practicing this form of environmental tourism are presented in the Forest Tourist Guide available on the internet.<sup>44</sup>

*Tourist trails* are currently of high importance for environmental tourism in Roztocze. The natural objects and features of the region can be explored along the cross-border (Kraśnik-Lwów) Central Bicycle Trail of Roztocze. *Labelled regional and local trails* are established for *pedestrians* (“Krawędziowy” and “Szumów” in Roztocze Tomaszowskie) and *bicycles* (“Jastrzębia Zdebrz” in Roztocze Gorajskie), as well as *exploration trails* and *educational trails* (environmental trails in the “Czartowe Pole” reserve and “Na Bukową Górę” in Roztocze Tomaszowskie).

*Green schools* combined with workshops for children and teenagers play an important role in education through tourism, e.g. in Roztocze Gorajskie: Janów Lubelski-Forest Treasury (Janów Lubelski-Leśny Skarbiec),<sup>45</sup> or Green School in the Solska Forest (Zielona Szkoła w Puszczy Solskiej).<sup>46</sup>

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<sup>41</sup> D. Newsome, R. Dowling, *The scope and nature of geotourism*. in: *Geotourism*, D. Newsome, R. Dowling (eds.), Butterworth-Heinemann, Oxford 2006, pp. 3–25.

<sup>42</sup> T. Słomka, A. Kicińska-Świdarska, *Geoturystyka – podstawowe pojęcia*, ”Geoturystyka” 2004, 1(1), pp. 1–7.

<sup>43</sup> <http://www.amethystwelt.at/> (accessed 2.10.2012).

<sup>44</sup> <http://www.czaswlas.pl/#> (accessed 20.02.2014).

<sup>45</sup> A.E. Szczepanowski, *Markowe produkty turystyczne*, Polskie Wydawnictwo Ekonomiczne, Warszawa 2012, pp. 1–212.

<sup>46</sup> [www.gala-travel.pl](http://www.gala-travel.pl) (accessed 20.02.2014).

### 3. Tourism products propagating environmental tourism

In this paper, the tourist product was considered in terms of the significance of tourism values representing the dominant destination.<sup>47</sup> Just in the case of Roztoczański National Park, it was possible to apply a research tool, allowing quantitative analysis of the measurable characteristics of the tourism product. The records of tourist traffic based on the number of sold tickets to nature trails in **Roztocze National Park** and the **Educational-Museum Centre** of the Roztoczański National Park in the years 2002–2010 suggest that an average of 43 thousand persons more visit them every year, with relatively high variability from year to year, from approximately 27 thousand to approximately 50 thousand visitors. The visitors are dominated by persons coming in groups – approximately 30.5 thousand of the average (71%). Individual visitors – approximately 12.5 thousand (29% – approximately every third person) – are mainly adults.<sup>48</sup>

Tourist traffic in the Roztocze National Park and the Educational-Museum Centre is very variable from month to month (Fig. 1). Relatively low tourist traffic is observed from November to March. In these months in the multi-annual 2006–2010, the average number of visitors varied from approximately 300 to approximately 750. A substantial increase in tourist traffic is particularly observed in May (7845 visitors) and June (7518 visitors). The frequency in these two months constitutes approximately 40% of the annual value. It is worth emphasising that only in July and August, visitors coming in groups (42.7% and 29.7%, respectively) have a lower contribution than individual visitors. In the remaining ten months, visitors coming in groups predominate (from 69.1% to 91.1% of the total number of visitors).<sup>49</sup>

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<sup>47</sup> B. Meyer, A. Gardzińska, *Znaczenie współpracy podmiotów samorządowych w procesie kreowania transgranicznego produktu turystycznego (na przykładzie województwa zachodniopomorskiego i Meklemburgii – Pomorza Przedniego)*. Zeszyty Naukowe Uniwersytetu Szczecińskiego 2014, Szczecin, *Ekonomiczne Problemy Turystyki*, No. 3 (27), pp. 209–225.

<sup>48</sup> A. Świeca, T. Brzezińska-Wójcik, T. Grabowski, K. Kałamucki, R. Krukowska, A. Tucki, *Turystyka i edukacja w Roztoczańskim Parku Narodowym i w jego otulinie*, in: *Roztoczański Park Narodowy – przyroda i człowiek*, R. Reszel, T. Grądziel (eds.), Wyd. RPN, Zwierzyniec 2013, pp. 219–230.

<sup>49</sup> Ibidem. pp. 219–230.

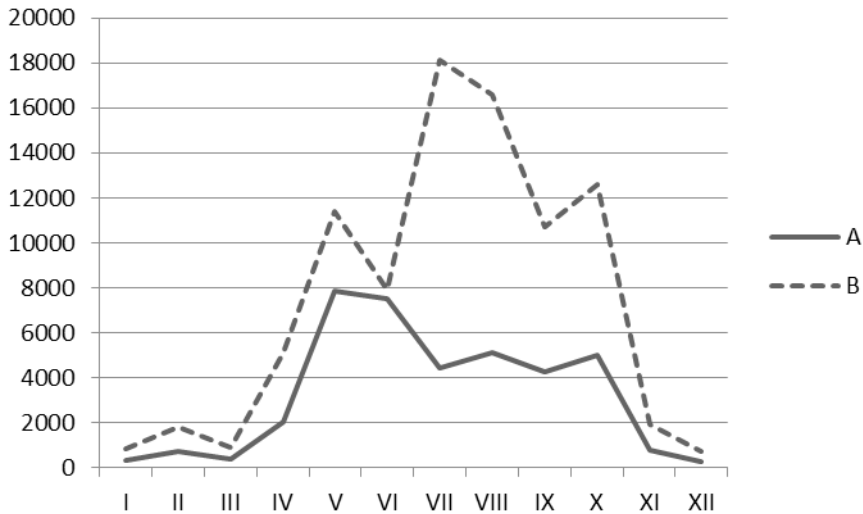


Fig. 1. Average numbers and seasonal character of tourist traffic in the Roztocze National Park in the years 2006–2010

A – number of visitors based on sold tickets to the trails of the Roztocze National Park and the Educational-Museum Centre

B – estimated tourist traffic based on monitoring

Source: own study based on the number of tickets sold for the path of Roztocze National Park and the Educational-Museum Centre and monitoring of tourism in Roztocze National Park.

Research on tourist traffic conducted at four sites (parking lot at the Educational-Museum Centre, Bukowa Góra, Florianka, and Echo Ponds) in the years 2006–2010 showed that the daily frequency of tourists varied from 1 to 5148 persons. The lowest frequency was recorded on the trail to Florianka, and the highest on the Echo Ponds. Very high disproportions were recorded in the tourist traffic in the studied objects: the Echo Ponds generated 52.6% of frequency, the Educational-Museum Centre – 24.9%, Bukowa Góra – 14.2%, and Florianka – 8.3%. Measurements in four periods (May, June, July, and August) showed that the Echo Ponds are the most popular in July (57.7% frequency), the Educational-Museum Centre – in August and July (29.6% and 29.5%, respectively), and Bukowa Góra and Florianka in May (38.3% and 36.9% frequency).<sup>50</sup>

<sup>50</sup> Ibidem.

The distribution of tourist traffic at the four measurement sites in the Roztocze National Park was the basis for calculating the values for the four considered months, and the average for the study period. The average annual tourist traffic in the Park is estimated at approximately 95-120 thousand persons.<sup>51</sup>

Since 1994, the Park's primary reception point has been the Educational-Museum Centre. It includes a tourist information office and a library with a reading room. The implementation of the statutory objectives related to making the Park available to tourism and education involves the organisation of various temporary exhibitions. The permanent exposition "In the land of fir, beech, and tarpan" is also functioning. Moreover, lectures, presentations, meetings, workshops, conferences, concerts, galas, and open-air photography and art workshops are held here. Their task is to generate a better understanding of the natural environment of Roztocze. Schools in the Park's buffer zone participate in a programme entitled "Roztoczański National Park and Us", based on the original drafts and syllabuses of educational classes developed in the Park, implemented in both schools and the Park. Moreover, interdisciplinary desk and field classes are conducted in the Park for various recipients. Cyclical educational programmes, among others "Nature's Senses", "Roztocze in Lens", "Closer to Nature", "Poetry and Nature" are part of the permanent calendar of events in Roztocze, and are very popular with visitors.<sup>52</sup>

Since 2011, the infrastructure of the Roztocze Scientific-Educational Centre has also been used for the implementation of educational programmes. It includes conference-exhibition rooms and the Forest Base in Florianka, where the permanent exposition presents the life of people in the forest settlement in the former Zamoyski Ordinance in the inter-war period of the 20<sup>th</sup> century. The park also coordinates extensive activities popularising the natural values of Roztocze by publishing folders, information booklets, maps, tourist guides, monographies, calendars, and lectures in the scope of the programme "Meetings in Roztocze".

The unique geological heritage of Roztocze provides a superb basis for the development of products in the scope of geotourism and landscape tourism.

**Geotourism products** functioning in Roztocze include: 1) linear products – didactic trail "Mining Excavations in Senderki", Educational Trail "Krasnobród

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<sup>51</sup> A. Świeca, T. Brzezińska-Wójcik, T. Grabowski, K. Kałamucki, R. Krukowska, A. Tucki, *Turystyka i edukacja w Roztoczańskim Parku Narodowym i w jego otulinie*, in: *Roztoczański Park Narodowy – przyroda i człowiek*, R. Reszel, T. Grądziel (eds.), Wyd. RPN, Zwierzyniec 2013, pp. 219–230.

<sup>52</sup> *Ibidem*, p. 230.

DINOSAURS”, and the Geotourist Trail of Middle Roztocze; 2) local products: museums – Krasnobród Village and Geological-Pottery Museum, Masonry Museum in Józefów, Petrified Trees Museum in Siedliska, museum in the Guciów Settlement; and 3) items – Geotourism Map of the Roztocze National Park. Some of them are already recognizable in supra-regional scale: museum in the Guciów Settlement (14.1% of responses), the Geotourist Trail of Middle Roztocze associated with the quarry “Babia Valley” in Józefów (9.1%), Petrified Trees Museum in Siedliska (5.1%).<sup>53</sup>

The design of the “**Mining Excavations in Senderki**” educational trail by the State Forests involves the publication of two folders, particularly in relation to the SAC (Special Areas of Conservation) of Natura 2000, protecting one of the most interesting winter colonies of bats in the Lublin region.<sup>54</sup> Moreover, the board sign designed in the scope of the Geotourist Trail of Middle Roztocze displays information regarding the remains of the underground and surface exploitation of Miocene rocks, mainly used for making millstones and quernstones, as well as for the production of lime, aggregates, and crushed rock gravel. The excavation, however, is not appropriately adjusted for tourism, and no records of tourists are performed. The object is proposed as one of the geosites<sup>55</sup> of the Stone Forest in Roztocze geopark.

The “**Krasnobród DINOSAURS**” Educational Trail in the St. Roch valley in Krasnobród has been functioning since May 2010.<sup>56</sup> It occupies an area of approximately 2 hectares, including models of reptiles made of epoxy resin, harmoniously composed with the forest space. The product, available from April through October, is inspired by the Jurassic Park in Bałtów. The “Journey in time” begins in the Archaic and Proterozoic, through Palaeozoic (“great explosion” in the Cambrian, traces of life in the Ordovician and Silurian) to the Mesozoic (Upper Cretaceous). In the playground, children can become palaeontologists searching for the buried model of a 13 m-long skeleton of *Tyrannosaurus rex*.<sup>57</sup>

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<sup>53</sup> S. Kula, *Percepcja i wykorzystanie walorów turystycznych Roztocza przez osoby odwiedzające region*, in: *Wpływ sektora B+R na wzrost polskiej konkurencyjności polskiej gospodarki poprzez rozwój innowacji*, t. 1, D. Jegorow, A. Niedużak (eds.), Wyd. CIVIS, Chełm 2012, pp. 55–65.

<sup>54</sup> <http://www.lublin.lasy.gov.pl/web/zwierzyniec/wydawnictwa> (accessed 20.02.2014).

<sup>55</sup> J. Urban, T. Młeczek, Z. Cierech, *Historyczne podziemne kopalnie kamieni młyńskich w Senderkach*, <http://geoportals.pgi.gov.pl/gsap/ObjectDetails.aspx?id=2243> (accessed 3.03.2014).

<sup>56</sup> <http://www.infoveriti.pl/firma-krs/357424.html> (accessed 20.02.2014).

<sup>57</sup> <http://www.dinozaury-krasnobrod.pl/pl> (accessed 4.03.2014).

The educational trail is equipped with information boards; therefore, the park can be visited with no tourist guide. Unfortunately, no statistics of visitors are available.<sup>58</sup>

**The Geotourist Trail of Middle Roztocze** and the **Geotourist Pavilion** in Józefów constitute the youngest geotourism product in Roztocze. It was developed by the Municipal and Commune Offices of Józefów (project leader) and Krasnobród, Commune Office of Susiec, and Forest Divisions of Józefów and Zwierzyniec, as well as the Roztocze National Park in the scope of a project co-financed from the Regional Operational Programme of the Lublin Province. Particularly interesting places along the trail include: a quarry of Miocene organodentric limestone in Józefów, Szopowem (Góra Młynarka), and Nowiny; a former quarry of Upper Cretaceous opokas in Krasnobród; mining excavations in Senderki; Wapielnia – the highest elevation of the Middle Roztocze; “Nad Tanwią” and “Czartowe Pole” reserves, and the sculpture workshop in Majdan Nepryski. The sites are equipped with so-called small infrastructure facilities – information boards with descriptions of particular sites, sheds, tables with benches and individual benches, bicycle parking racks, and garbage bins. The trail is described in a tourist-geologic map available in the geotourist pavilion in Józefów. The trail also includes three vantage points in Józefów and Krasnobród, and a view platform in the quarry in Nowiny. The trail has been only functioning since 2012. According to the interview with an employee of the tourist information office in the pavilion, it is very popular (recording tourist traffic by means of pyroelectric sensors is planned).<sup>59</sup>

**Krasnobród Village and Geological-Pottery Museum** in Krasnobród, located in the monastery yard, was developed in the years 1989–1994. The museum includes among others an exhibition of Upper Cretaceous fossils of plants and animals (more than one hundred specimens of calcareous rocks, particularly from the quarry in Krasnobród). The all year round, free of charge tourist offer is targeted at a wide range of recipients. No records of visitors are conducted.<sup>60</sup>

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<sup>58</sup> T. Brzezińska-Wójcik, *Produkty geoturystyczne w województwie lubelskim jako przykład działań innowacyjnych, poszerzających dotychczasową ofertę turystyczną regionu*, in: *Wpływ sektora B+R na wzrost polskiej konkurencyjności polskiej gospodarki poprzez rozwój innowacji*, t. 1, D. Jęgorow, A. Niedużak (eds.), Wyd. CIVIS, Chełm 2012, pp. 127–148.

<sup>59</sup> Ibidem, pp. 138–139.

<sup>60</sup> Ibidem, p. 140.

**The Masonry Museum** in the Municipal-Commune Cultural Centre in Józefów, located at the town's central square, is dedicated to the folklore sculptor Adam Grochowicz. It includes a small collection of pieces made of organodentric (Józefów) limestone with sacred and secular art details. The museum also presents tools used for the excavation and processing of limestone. The all year round, free of charge tourist offer is targeted at various groups of recipients, with a requirement of prior telephone reservation. No record of visitors is conducted.<sup>61</sup>

**The Petrified Trees Museum** in Siedliska, opened in June 2003, continuously collects new exhibits and obtains funds for further development and promotion. The largest and most important among its three thematic rooms is the room with the exposition of approximately 500 fragments of petrified tree trunks (the largest collection in Poland).<sup>62</sup> Cognitive tourism oriented at aesthetic impressions is encouraged by: the very high scientific value of the product, and its illustrativeness. Unfortunately, relevant informative posters are still missing. Inspired by several global examples of geoparks exhibiting petrified wood, modern swamp cypress trees were planted in the park as "living fossils", although quite far from the museum exposition. This is beneficial, however, because a thematic trail was designed, also including other places with exposition of fragments of fossilised wood ("Jalinka" reserve, lapidaria – at the church and at the oak next to the forester's lodge, tombstone in the local cemetery). The all year round, free of charge tourist offer is targeted at various groups of recipients: regional, domestic, and foreign tourists, young and older, organised and individual. The free of charge parking lot for couches and passenger cars, a shed with benches next to the object, and adjustments for handicapped persons are very useful facilities. According to the interview with the museum's curator, the number of museum pieces is continuously increased. Tourist traffic in the object is seasonal. It is the most frequently visited from May to September, particularly by organised groups. Unfortunately, no statistics of visitors have been conducted so far.<sup>63</sup>

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<sup>61</sup> Ibidem, pp. 139–140.

<sup>62</sup> <http://www.siedliska.com.pl/muzeum> (accessed 13.01.2014).

<sup>63</sup> T. Brzezińska-Wójcik, *Produkty geoturystyczne w województwie lubelskim jako przykład działań innowacyjnych, poszerzających dotychczasową ofertę turystyczną regionu*, in: *Wpływ sektora B+R na wzrost polskiej konkurencyjności polskiej gospodarki poprzez rozwój innowacji*, t. 1, D. Jegorow, A. Nieduzak (eds.), Wyd. CIVIS, Chełm 2012, pp. 127–148.



A peculiar environmental tourism offer in Roztocze is the collection of items in the **Guciów Settlement**. Since 2013, the wooden building from the 18<sup>th</sup> century has been housing a museum with a permanent exposition including meteors, tektites, and impactites, entitled “Falling Stars”. The exhibits include, among others, the Polish meteor called Zakłodzie (from the name of the village in Roztocze where it was found in 1998 by S. Jachymek). It is an initially classified original enstatite chondrite with a weight of 8.68 kg, covered with a rusty layer.<sup>64</sup> Moreover, the museum displays spoors of dinosaurs found in Roztocze in the Potok village, 5 km from Guciów. They are tracks of herbivorous duck-billed dinosaurs – hadrosaurids, and a several meters long predator from family Tyrannosaurus.<sup>65</sup> Fragments of the trunk of a Cretaceous tree fern and leaves of trees imprinted in an Upper Cretaceous opoka, as well as numerous ammonites, are also displayed.

A new geotourism product, currently at the stage of development, is the **Stone Forest in Roztocze geopark**. This large-area tourism product is at the first stage of designing.<sup>66</sup> The next stage involves obtaining the status of a National Geopark.

An extensive educational offer is provided by the **NATURE ZOOM Recreation Park** (with an area of more than 10 ha), located on the Janów Lubelski Reservoir, functioning since 2013. The Centre of the Park is occupied by modern educational laboratories (Nature ZOOM, Avifauna and Troposphere, Energy and Recycling, and Forest Floor), combining active exploration of nature and fun. In the Park, natural vegetation is harmoniously composed with walking trails with fountains, bicycle paths, outdoor gyms, and a bouldrome. The primary educational objective is to raise ecological awareness, and develop proecological attitudes

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<sup>64</sup> <http://www.guciw.pl/muzeum> (accessed 15.01.2014); T.A. Przylibski, P.P. Zagożdżon, R. Kryza, A.S. Pilski, *Mineralogia, Petrologia, Geneza I Propozycja Nowej Klasyfikacji Meteorytu Enstatytowego „Zakłodzie”*, Olsztyńskie Planetarium i Obserwatorium Astronomiczne, Polskie Towarzystwo Meteorytowe, II Seminarium Meteorytowe, Olsztyn 2003, pp. 80–101. <http://www.ptmet.org.pl/wydawnictwa/2003%2012%20Przylibski%20et.al.pdf>.

<sup>65</sup> G.D. Gierliński, I. Ploch, E. Gawor-Biedowa, G. Niedźwiedzki, *The first evidence of dinosaur tracks in the Upper Cretaceous of Poland*, “Oryctos” 2008, 8, pp. 107–113.

<sup>66</sup> M. Krapiec, L. Jankowski, W. Margielewski, J. Buraczyński, P. Krapiec, J. Urban, A. Wysocka, M. Danek, E. Szychowska-Krapiec, M. Bolka, T. Brzezińska-Wójcik, Ł. Chabudziński, A. Waškowska, „*GEOPARK KAMIENNY LAS NA ROZTOCZU*” koncepcja geochrony wraz z wykonaniem dokumentacji i badań naukowych niezbędnych dla funkcjonowania tej formy ochrony, Akademia Górniczo-Hutnicza im. Stanisława Staszica, Kraków 2011, pp. 1–278.

in participants. For the youngest visitors, Zoom is preparing a special educational laboratory (planned opening in spring 2014). In this “forest kindergarten”, children will be able to become familiar with the basic principles of functioning of the environment and ecology while having fun (workshops and sensory-physical activities with the application of multimedia). Among others, an installation with transparent illuminated root systems of vegetables and grasses is designed, facilitating fun education (games, films, riddles, animations, etc.). Parents can visit the laboratories, and learn about bird species or types of clouds. The designers of the Recreation Park also support the idea of active cognition, combining cognitive content with multi-sensory experiences and live emotions. The Park will organise annual meetings for amateur herbalists and gardeners. The activity of the Nature Zoom Recreation Park will also include (from 2014) meetings and conferences regarding among others the following issues: ecological energy sources, active and educational tourism, herbal medicine, and nature in the cosmetics industry<sup>67</sup>.

## **Conclusion**

The didactic value of environmental tourism in Roztocze involves generating the need of contact with nature. This is suggested by the results of the analysis of tourist traffic in one of the most important tourism products, namely the Roztocze National Park.

Although most (except Roztoczański National Park) of the analyzed tourism objects/attractions do not contain all the components of the tourism product, that they are a good starting point to form a complete, integrated offer. Due to the varied geological-geomorphological conditions, diversified landscape, high forest cover, and well developed network of tourist trails, Roztocze offers favourable conditions for the development of environmental tourism. The substantial educational values of the outcrops of Upper Cretaceous, Eocene, and Miocene rocks, as well as Quaternary deposits, rocks, knickpoints in river channels, springs, and well-heads provide the basis for the development of cognitive tourism products.

The current offer of Roztocze in the field of nature tourism and tourism education is no possibility of its use and expansion. The analysed products pro-

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<sup>67</sup> <http://www.zoomnatury.pl/> (accessed 28.02.2014).

vide the basis for the development of ecotourism (personal contact with specific elements or forms of nature, natural complexes, or landscapes), contemplation tourism (experiencing intimate contact with nature, and its beauty variable in time and space), and self-fulfilment tourism (getting to know oneself, one's own mental and physical possibilities).

Currently tourism, based on natural resources, generates funds for the nature conservation only in the Roztocze National Park. Two offers – Educational Trail “Krasnobród DINOSAURS” and museum in the Guciów Settlement – affect local economic development because they generate income and give the jobs.

Changes in the awareness of the local community regarding the geological heritage demonstrates the organization and functioning of the Petrified Trees Museum in Siedliska. Because the group of Siedliska residents founded the association “Our Habitat,” which was gained funds for the preparation of the exhibition. In addition, individual residents has supported the initiative, bringing pieces of petrified wood exposure.

Increasingly also products made in relation to the geological heritage (Masonry Museum in Józefów, the Geotourist Trail of Middle Roztocze with the map, Krasnobród Village and Geological-Pottery Museum, didactic trail “Mining Excavations in Senderki”) are perceived by local governments, state institutions and local communities as a chance to diversify the existing of the nature educational offer.

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## STAN I PERSPEKTYWY ROZWOJU PRODUKTÓW TURYSTYCZNYCH NA ROZTOCZU W KONTEKŚCIE TURYSTYKI PRZYRODNICZEJ I EDUKACYJNEJ

### Streszczenie

Unikatowe dziedzictwo przyrodnicze Roztocza stanowi bardzo dobre podstawy do rozwoju turystyki przyrodniczej i edukacyjnej. Aktualnie w tym regionie istnieje zaledwie kilka produktów z tego zakresu. W niniejszym opracowaniu zaprezentowano aktualną oraz przygotowywaną ofertę w zakresie turystyki przyrodniczej i edukacji na Roztoczu. Podstawą opracowania są źródła danych pośrednich (literatura przedmiotu, dokumenty strategiczne, materiały promocyjne, strony internetowe) oraz bezpośrednich (inventaryzacja terenowa, wywiady z organizatorami ofert geoturystycznych). Wielkość ruchu turystycznego w jednym z ważniejszych produktów turystycznych, jakim jest Roztoczański Park Narodowy, przedstawiono na podstawie danych z lat 2006–2010 (monitoring o charakterze ilościowym i jakościowym, ujęcia dzienne, miesięczne, sezonowe). Przedmiotem analizy jest również oferta nowych produktów na Roztoczu, ze szczególnym uwzględnieniem produktów geoturystycznych. Wyniki badań wskazują, że, większość spośród przeanalizowanych obiektów/atrakcji turystycznych nie zawiera wszystkich składowych produktu turystycznego. Tylko niektóre spośród nich generują środki na ochronę przyrody oraz wpływają na lokalny rozwój gospodarczy. Mimo to stanowią one dobry punkt wyjścia do kształtowania pełnej, zintegrowanej oferty. Ponieważ coraz bardziej produkty takie postrzegane są przez samorządy, instytucje państwowe i społeczności lokalne jako szansa na dywersyfikację dotychczasowej przyrodniczej oferty edukacyjnej.

**Słowa kluczowe:** produkt turystyczny, turystyka przyrodnicza, edukacja, Roztocze