

## RECREATIONAL USAGE OF THE CENTRAL PART OF THE JAVORNÍKY MTS

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### Abstract

The forest, hiking and active recreation are the topics that are often associated with a person's mental health. It is the forest and the forest environment that are used for tourism associated with active rest and gaining new energy. The Javorníky Mts. are characterized by high recreational attractiveness there are many historical cultural monuments, natural attractions and recreational centres. The territory is a favourite tourist area due to the number and variety of tourist trails, while it is exceptional in its accessibility from the Slovak and Czech sides.

The whole area of the Javorníky Mts. comprises 56 trails with the total length of 859 km, their central part comprises 23 trails with the total length of 309 km. A proposal was created to increase the attractiveness of the area and its tourist potential, namely the proposal of a new multifunctional tourist trail with total length of 22.64 km equipped with recreational mobiliary. The proposed trail will contribute to increasing the accessibility of the territory, while the density of trails will increase to 7.94 m. ha<sup>-1</sup>.

**Keywords:** recreation, hiking trail, mobiliary environment

### Introduction

The recreational function of the forest is a significant ecosystem service that allows the forest to provide an environment for various forms of recreation. It belongs to functions that exist only if there is interest in them, often independently of the will of the owner or manager of the forest. Accessibility and recreational facilities of the area are important to support this function. The aim of the work was to propose measures to increase the attractiveness and tourism potential of the area of interest - the Javorníky Mountains, based on mapping the recreational use of the area, specifically its central part.

### Materials and methods

The work is focused on the Javorníky Mountain, which geomorphologically falls within the area of the Slovak-Moravian Carpathians, forming part of the state border between Slovakia and Czechia in the northwest. Its territory covers an area of 1,113 km<sup>2</sup>, with the Slovak part comprising 869 km<sup>2</sup> and being divided into 2 subunits: Vysoké Javorníky and Nízke Javorníky (ATLAS KRAJINY SR, 2002, Wikipédia). The area of interest is part of the large protected area of the Kysúce Protected Landscape Area (CHKO Kysúce), and it also contains several nature reserves (Razula, Hričovec, Veľký Javorník, Makyta). The central part of the Javorníky Mountains, as the area of interest, is more precisely delineated on the east and northeast by the Kysuca River, on the south by the channel of the Váh River from the village of Kotešová to the village of Mikšová, on the north along the border of the Žilina and Trenčín self-governing regions, and on the northwest by the state border.

The methodology of the work was established for field data collection of qualitative and quantitative data related to mapping recreational use in the area of interest. Within the field survey, tourist accessibility of the area, movement and activities of tourists, tourist needs through questionnaire (100 respondents), presence of existing tourist trails, and specification of the recreational potential of the area were mapped. Based on the survey outputs, a proposal for improving recreational use was developed, whether in terms of proposing a new trail, functional areas, or recreational infrastructure. The trail proposal in the field was implemented following the STN 736108 Forest Transport Network and methodology of ĽUPTÁK (2010) using a multifunctional navigation application, Locus Map, and computer geoinformation software, QGIS. Proposals for recreational mobiliary were made using CAD software for technical drawing, AutoCAD.

### Results

The Javorníky Mountains are characterized by high recreational attractiveness supported by good accessibility from both sides of the state border. There are numerous historical cultural monuments, natural attractions, and recreational centers here. It is a sought-after tourist area due to the abundance

and variety of hiking trails with low difficulty, excellent accessibility, and good facilities. The highest concentration of tourists is in the central and western parts, bordering Czechia, where pedestrian hiking and cycling trails are intensively used, while in winter, cross-country skiing trails and ski resorts are popular.

Among the main attractions of the area are:

- Historical cultural monuments, such as the Greguša settlement with its unique bell tower or the Magale settlement with the Slovak National Uprising memorial, both burned down during World War II.
- Natural attractions, including remnants of beech primeval forests, mountain meadows, surface and subsurface pseudokarst formations, and viewpoints.
- Tourist observation towers, offering beautiful views not only of the Beskids or Kysúce but also as far as the Malá Fatra or Western Tatras. These towers are constructed as multi-level wooden structures, sometimes combined with stone, reaching heights of up to 20 meters. There are 9 such observation towers in the area: Jantov Tower (560 m.a.s.l.), Tábor (697 m.a.s.l.), Zarubaná Kyčera (884 m.a.s.l.), Svederník (551 m.a.s.l.), Stratenec (1055 m.a.s.l.), Zakopčie (854 m.a.s.l.), Veľký Vrch (490 m.a.s.l.), Luby (908 m.a.s.l.), and Mikovčákova Tower (834 m.a.s.l.).
- Recreational centers - There are 7 ski resorts in the area: Ski Čertov, Ski Kasárne Javorníky, Ski Makov, Ski Park Dešná, Ski Podjavorník, Ski Ráztoka, and Ski Šerkov, which offer a wide range of recreational activities not only in the winter but also in the summer season. Overall, there are 20.3 km of downhill ski slopes, 66 ski lifts, and 21 cross-country skiing trails with a total length of 132 km available in these resorts (<https://www.holidayinfo.sk/sk/horske-strediska>).

Hiking trails - In the area of interest, there are 56 marked hiking trails with a total length of 869 km, of which 35 are multifunctional trails with a total length of 289 km, used for various forms of hiking. When specifying trails according to their tourist significance, there are 8 red hiking trails with a total length of 127.8 km, 12 blue trails with a total length of 217.7 km, 12 green trails with a total length of 167.4 km, 24 yellow trails with a total length of 145.9 km, and the remaining trails constitute other designations (<https://www.kst.sk>). The overall density of hiking trails is 9.88 m.ha<sup>-1</sup>.

The most interesting and visited part of the Javorník Mountains is its central region, which holds tremendous tourist potential and concentrates the majority of tourist infrastructure. There are 23 marked hiking trails in this area with a total length of 309 km, including 3 red trails (47.7 km), 6 blue trails (152 km), 5 green trails (67.15 km), and 9 yellow trails (42.15 km). The density of hiking trails in its central part is 7.39 m.ha<sup>-1</sup>.

For improving accessibility and enhancing the attractiveness of the area for tourists, a multifunctional hiking trail with recreational mobiliary has been proposed. This trail will serve both pedestrian and cycling tourism, as well as other forms of physical activity. Such multifunctional trails have several limitations, primarily regarding user capacity and safety. Therefore, the proposal utilizes the existing road network with a hardened surface, particularly the forest road network. The width of the roadways is a minimum of 4.0 meters, allowing for the potential simultaneous use of multiple forms of physical activity on the same route. The proposed route will connect the Bytčianska and Petrovecká valleys, which will be significant for the development of tourism for surrounding settlements, the town of Bytča, and the villages of Hliník nad Váhom, Veľké Rovné, Kolárovice, and Petrovice. The proposed trail offers numerous natural phenomena, cultural monuments, untapped water springs, and beautiful viewpoints. The total length of the proposed route is 22.642 kilometers. The trail allows connections to several existing hiking trails and follows these existing roadways:

Stationing

- Kilometer 0.0 - 13.442: Forest road 1L to Hutce (bitumen pavement).
- Kilometer 13.442 - 16.567: Local community road to Korytné (bitumen pavement).
- Kilometer 16.567 - 20.142: Forest road 2L to Čaklov (gravel surface).
- Kilometer 20.142 - 22.642: Forest road 3L (earth surface).

The directional and elevation profile of the trail (Figures 1 and 2) is as follows: The trail begins in the village of Hliník nad Váhom at the starting point on the Class III road near the Hričovský Canal of the Váh River. It continues along the valley road with bitumen pavement, ascending through the forested area beneath the hills of Benková and Paliesok. It then ascends to a saddle, passes beneath the ridge and around the hill of Kočí zámok. Here, there is a change in gradient, leading to a descent and subsequent ascent to the border of the cadastral area of Veľké Rovné. From there, it descends into the village of Kolarovice, passing through the Škoruba and Korytné parts. It then continues to ascend along a gravel-surfaced forest road to the settlements of Bršlica and Pláň, and proceeds along a dirt road, descending more steeply into the Mitášov Grúň area, where the trail ends.

On the trail, 5 starting points have been proposed: Hliník nad Hronom (Hričovský Canal of the Váh River), Zlatníková, Veľké Rovné (Kříž/Ličkov), Fojtovo, and Škoruby. Their selection was based on public transport accessibility and tourist service with recreational amenities. The localization of starting points also allows for great variability for tourists in selecting only a certain part of the trail or connecting to other existing trails. In addition to the starting points, 4 resting areas have been proposed, complementing the existing 5 resting areas equipped with small recreational structures such as information boards, signposts, seating, fireplaces, wells, and garbage bins, totaling 12 units. 21 new recreational mobiliary objects were proposed, along with their material and cost calculation. The proposal also includes their distribution as shown in Table 1. Primarily, these are wooden structures made from debarked spruce logs supplemented with construction timber (boards), and if necessary, with stone or concrete (e.g., for anchoring into the terrain, etc.).

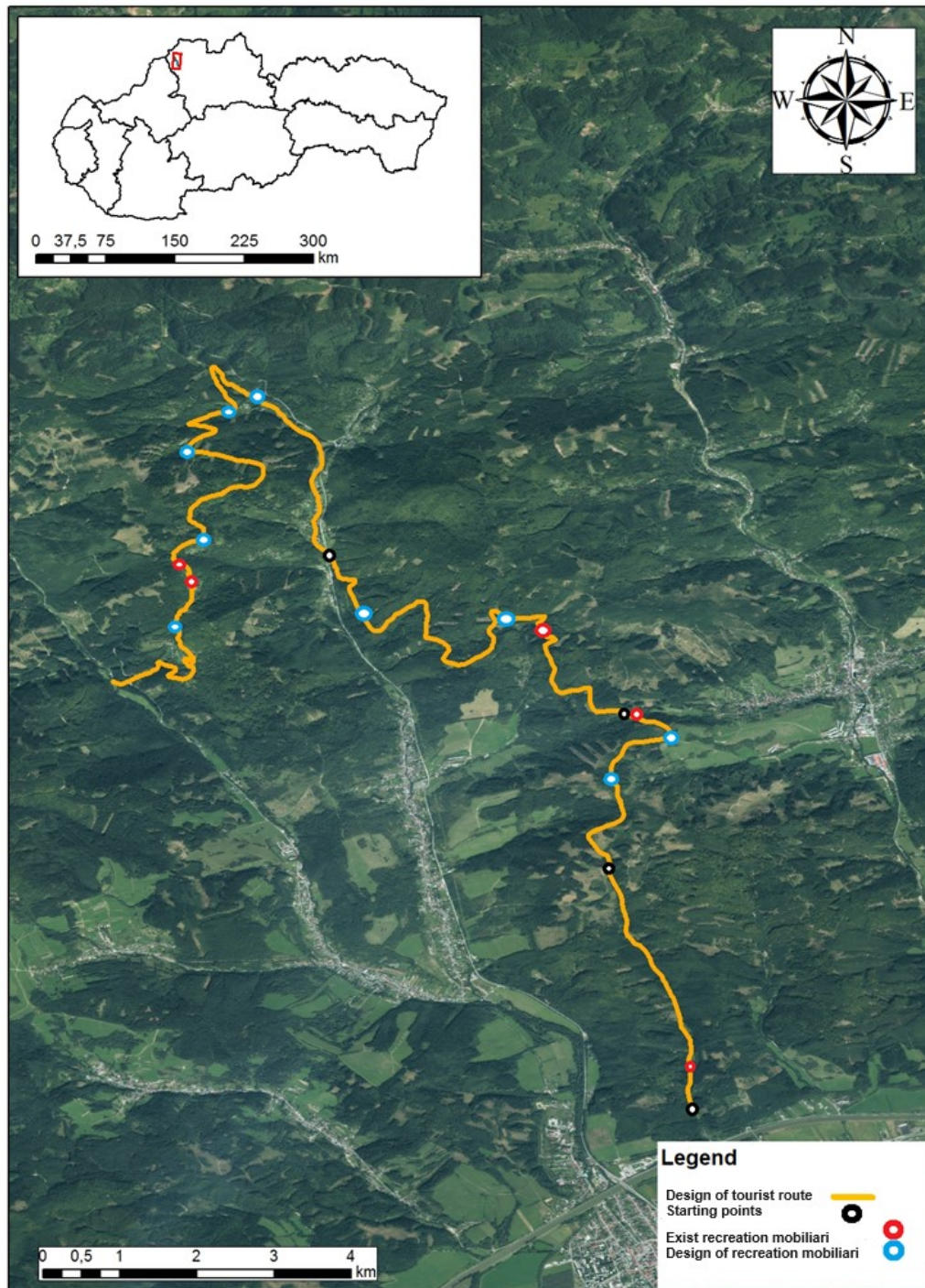


Fig. 1: Map of the area of interest with proposed trails



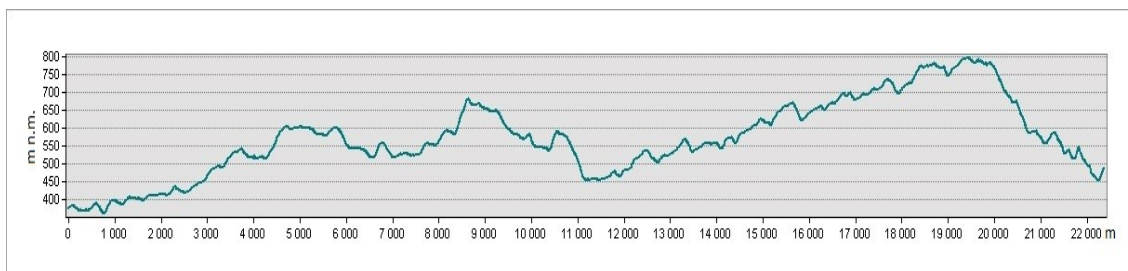


Fig. 2: Longitudinal profile of the proposed multifunctional hiking trail

Tab. 1: Recreational mobiliary

stationing (km)	Recreational mobiliary
3.121	Gazebo with seating, fireplace, garbage bin
3.965	Open seating, garbage bin, signpost
7.056	Water well
11.228	Open seating, fireplace, garbage bin
15.837	Open seating, fireplace, garbage bin
16.912	Water well
17.386	Gazebo with seating, fireplace, garbage bin
19.569	Open seating, garbage bin, signpost
21.572	Information board

## Conclusion

The Javorníky Mountains range is among sought-after and popular tourist destinations, further enhanced by its location on the Slovak-Czech border, resulting in sought-after and immediate movement of tourists from one country to another. For cross-border tourism to be attractive, the area must have sufficient recreational facilities. This work addresses the utilization of existing transportation and recreational infrastructure for further recreational development of the area of interest, the central part of the Javorníky Mountains, by proposing a multifunctional hiking trail with a length of 22.64 km, purposefully supplemented with service facilities such as starting points and rest areas equipped with suitable recreational furniture. The implementation of this proposal will effectively complement the existing recreational infrastructure, increase the recreational attractiveness of the area, contribute to improving its accessibility, as the trail density increases to  $7.94 \text{ m.ha}^{-1}$ , and is expected to attract more tourists.

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## Souhrn

Les, turistika a aktivní odpočinek jsou témata, která jsou často spojována s duševním zdravím člověka. Právě les a lesní prostředí slouží k pěší turistice a aktivnímu odpočinku a načerpání sil. Javorníky se vyznačují vysokou rekreační atraktivitou, je zde řada historických kulturních památek, přírodních zajímavostí a rekreačních středisek. Oblast je vyhledávanou turistickou oblastí díky množství a rozmanitosti turistických tras, přičemž je výjimečná svou dostupností ze slovenské i české strany.

Na celém území Javorníků je celkem 56 turistických tras o délce 859 km, přičemž v centrální části Javorníků je 23 turistických tras o celkové délce 309 km. Byl zpracován návrh na zvýšení atraktivity

území a jeho turistického potenciálu návrhem nové multifunkční turistické a cyklistické stezky v délce 22,64 km, vybavené rekreačním zařízením.

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