

## DESIGN OF CREATING AN EDUCATIONAL TRAIL SELEC – INOVEC

*Vladimír Juško<sup>1</sup>, Hrvoje Sivrić<sup>2</sup>, Matej Rozkopál<sup>1</sup>*

*<sup>1</sup>Department of Forest Harvesting, Logistic and Amelioration, Faculty of Forestry; Technical University in Zvolen, T. G. Masaryka 24, Zvolen, Slovakia*

*<sup>2</sup>Department of Social Sciences and Humanities, University of Slavonski Brod, Ulica 108. brigade ZNG 36, Slavonski Brod, Croatia*

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### Abstract

Educational trails represent a specific form of environmental interpretation of the landscape. These are thematically designed routes in a natural or cultural environment, which are an important tool of environmental education, especially in protected areas. The aim of the work was a practical design of the educational trail Selec – Inovec. The design consists of the proposal of the route, the content design and the placement of information boards as well as the design of additional recreational mobiliary. The proposed educational trail is situated in the area of interest of the Považský Inovec mountain range. It is linear with a total length of 5.607 km; on the route a total of 13 stops are proposed, which contain 11 information boards thematically focused on the area of natural attractions, history and forestry activity, 3 rest areas, as well as other necessary recreational mobiliary. The educational trail should serve as an element of forest pedagogy for the forestry entity managing the given area when working with the public.

**Key words:** Recreation, educational trail, recreational infrastructure, informational board

### Introduction

In addition to their main production function, forests also fulfill a number of non-production functions, within which the social demand is increasing also for recreational and educational functions of the forest. In this context, environmental education is gaining increasing importance, the aim of which is to shape a positive relationship of humans to nature and to support responsible behavior toward the environment.

Such a function is fulfilled precisely by educational forest trails; these are thematically focused routes that allow visitors to acquire knowledge directly in the natural environment, which increases their understanding and memorability of information.

The aim of the work was the design of the educational trail Selec – Inovec thematically focused on local natural attractions and forestry activity.

### Materials and methods

The area of interest is localized in the cadastral territory of the municipality of Selec, which is located in the foothills of the Považský Inovec, south of the regional city of Trenčín at a distance of 15 kilometers. In the area of interest we can find several natural attractions:

- “natural monument Selecké stone sea” on an area of 4.83 ha with the 5th level of protection, which originated by frost weathering of quartzite rock, which created a scatter of boulders. The stone sea is formed from Triassic quartzites of the Lúžňany formation; it is composed of white gray-white to white quartzites with the presence also of heavy minerals (zircon, tourmaline, rutile) (<https://app.geology.sk/gm50/>);
- “nature reserve Považský Inovec” on an area of 35.42 ha with the 5th level of protection, part of this area is on the UNESCO World Heritage list;
- “natural monument Selecký stream” on an area of 4.53 ha with the 4th level of protection; it is a preserved mountain stream together with tributaries and bank vegetation;
- the peak Hradisko (732 m a.s.l.), where there are remains of fortification of a former Slavic hillfort, especially ramparts of the hillfort;
- the forest railway Trenčín – Selec, which served for the transport of harvested timber from the Považský Inovec mountain range to the sawmill in Trenčín; the route started in Trenčín, passed through Soblahov, Mníchovská Lehota, Trenčianska Turná up to Selec. It was operated in the period 1912–1937; its total length was 38.5 km; to this day several parts are preserved, such as the track body, stone and concrete bridge pillars and culverts or cuttings in the terrain (<https://www.juce.sk/rozne/uzkorozchodna-zeleznica/63-urz1>).

The methodology of the work consisted in terrain reconnaissance, by which the area of interest was mapped from the point of view of the occurrence of natural attractions and existing recreational use,

which was the basis for the design of the educational trail route, namely from the point of view of directional and elevation alignment, spatial arrangement, character of the surface or existence of objects of recreational use.

Using a GPS locator, the selection of suitable places for the placement of educational-information boards or other tourist mobiliary was recorded. The directional and elevation solution of the route was designed using the map portal Zbgis (<https://zbgis.skgeodesy.sk/>), where the placement of individual educational-information boards and rest areas was also designed.

At the rest areas, the necessary recreational mobiliary was designed; the technical design of individual objects of recreational mobiliary or educational-information boards was elaborated in the environment of the software AutoCAD 2000. Finally, the content and graphic design of individual panels of the educational-information boards was designed.

## Results

The design of the directional solution of the educational trail Selec – Inovec (Fig. 1) is localized in the subunit Vysoký Inovec belonging to the Považský Inovec mountain range, characterized by intensive tourist use with a rich network of marked tourist routes (approx. 373 km).

The route passes through several tourist routes and cycling routes, which are clearly marked in the terrain in accordance with the standard STN 01 8025.

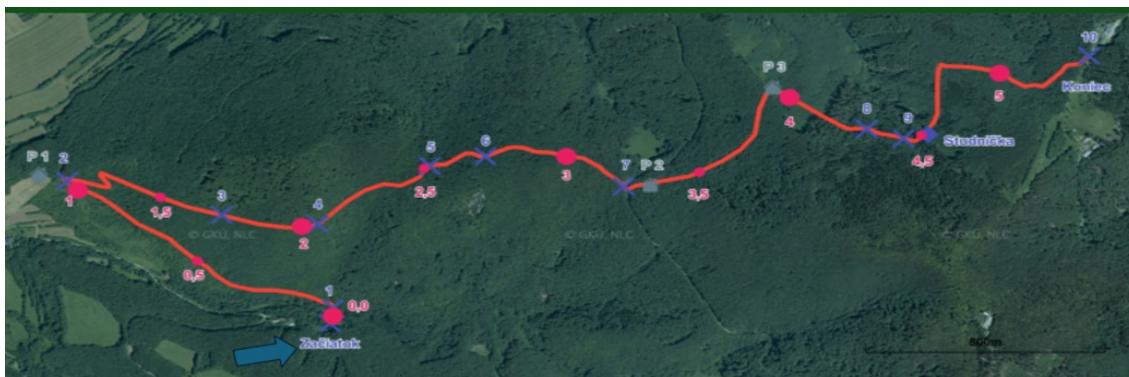


Fig. 1: The map of the area with the proposed educational hiking trail

The route design begins behind the village of Selec in the valley of the Krželnický stream behind the forester's lodge in the locality Konrút with a starting point with a parking area in front of a historical stone railway bridge at an elevation of 442.2 m a.s.l.

The first section leads along the red cycling magistral Around Považský Inovec (No. 044, length 128 km) up to the summit station of the former local ski lift at stationing 1.144 km; this section goes along the body of the former narrow-gauge forest railway (Trenčín – Selec).

From there it connects to the green tourist route (No. 5111 Nové Mesto nad Váhom – Mníchová Lehota, length 29.3 km) and continues along it below the hill Hradisko up to the locality Haranty, where there is a junction of 8 roads together with a timber loading site; there is also a tourist signpost "Za sokolou skalou" (647 m a.s.l.).

From this place the route connects to the blue cycling route (No. 2313 Kálnica – Chata pod Inovcom – Dubodiel, length 40 km) and leads up to the end of the educational trail, which is located below Chata pod Inovcom at an elevation of 788.4 m a.s.l., with the possibility of further continuation along the red cycling route (No. 0705 Hlohovec – Inovec – Trenčín, length 83.95 km). The proposed route has a linear character; its length is 5,607 m, elevation gain 346.2 m.

The route passes through a forest complex with several nice viewpoints, where 3 rest areas were also designed. The average slope of the proposed route is 6.17%; the elevation profile of the route (Fig. 2) is moderately demanding, it begins with a flat section up to the summit station of the former local ski lift; from here it continues with the steepest ascent of the route (slope 14%) with a length of approx. 1 km and further continues up to the end of the route in a gentle ascent with the exception of three short descending sections.

The proposed route has an earthen or gravel surface without more significant erosion damage and without the need for terrain modifications; it is of sufficient width allowing movement or meeting of pedestrians and cyclists.

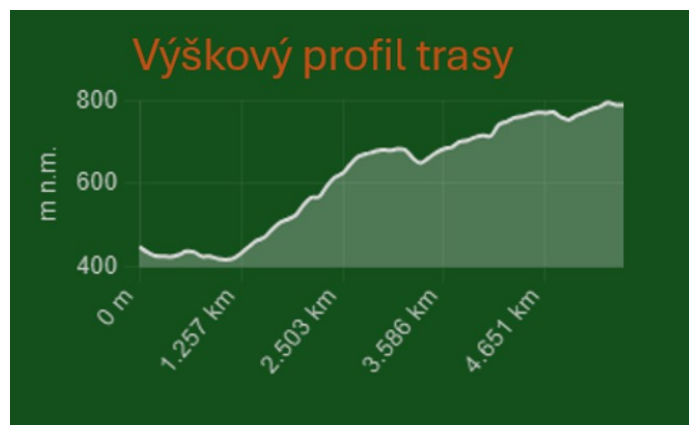


Fig. 2: Longitude profile of trail

To this was adapted the proposal of the content of individual educational–information boards. A total of 11 boards are proposed, an introductory welcome board placed at the starting point of the trail with the basic characteristics of the educational trail and a further 10 thematically focused boards (Tab. 1). Their placement in the terrain was based both on the selection of suitable locations for their placement and also from the point of view of the content of individual boards for their practical visualization directly in the terrain.

Tab. 1: Thematic content of educational information boards

No.	Thematic focus	Stationing (km)
0	Welcome to the educational trail Selec – Inovec	0.000
1	History and present of the forest railway Trenčín – Selec	0.037
2	Municipality Selec / behavior in the forest	1.107
3	Artificially created communities of European larch ( <i>Larix decidua</i> )	2.074
4	Natural communities of European beech ( <i>Fagus sylvatica</i> )	2.232
5	Decline and dieback of ash trees	2.265
6	Selecké stone sea	2.883
7	Forest transportation network	3.438
8	Forest protection	4.440
9	Forest and water	4.480
10	History of Forest Enterprise Inovec s.r.o.	5.607

Educational–information boards will be made of wood; supporting posts will be made of beams 150 × 150 mm; the structure will be covered with a wooden gable roof; the panel base with dimensions 1400 × 1200 mm will be made of wooden boards and on it the actual board filling made of plastic–aluminum composite will be attached, which will be protected against weather conditions by lamination; they will be installed into the terrain on concrete footings using steel profiles.

The graphic visualization of the educational–information board is solved by dividing its area into 4 zones (Fig. 3):

1. serial number of the stop with stationing,
2. thematic title of the educational–information board,
3. text part of the addressed issue,
4. image part of the addressed issue.



## Conclusion

The basic goal of an educational trail is to use the visitor's stay in nature also for their reflection and education from knowledge and information made accessible along the route of the educational trail.

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## Souhrn

Naučné stezky predstavujú špecifickú formu environmentálnej interpretácie krajiny. Jedná sa o tematicky koncipované trasy v prírodnom alebo kultúrnom prostredí, ktoré jsou významným nástrojom environmentálneho vzdelávania zejména v chránených územích.

Cílem práce byl praktický návrh naučné stezky Selec – Inovec. Návrh spočívá v návrhu trasy, obsahovém návrhu a rozmístění informačních tabulí, jakož i návrhu dalšího rekreačního mobiliáře.

Navrhovaná naučná stezka je situována v zájmovém území pohoří Považský Inovec. Je liniového charakteru o celkové délce 5,607 km; na trase je navrženo celkem 13 zastávek, které obsahují 11 informačních tabulí tematicky zaměřených na oblast přírodních atraktivit, historie a lesnické činnosti, 3 odpočinková místa, jakož i další nezbytný rekreační mobiliář.

Naučná stezka by měla sloužit jako prvek lesní pedagogiky pro lesnický subjekt obhospodařující dané území při práci s veřejností.

## Contact:

Ing. Vladimír Juško, PhD.

E-mail: [jusko@tuzvo.sk](mailto:jusko@tuzvo.sk)

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