

## TOWARDS A NETWORK OF HORSEBACK RIDING TRAILS IN A FOREST ENVIRONMENT

**Petr Hrůza<sup>1</sup>, Dominika Krausková<sup>2</sup>, Hana Trtilková<sup>3</sup>, Tamara Tichá<sup>4</sup>**

<sup>1</sup> *Department of Landscape Management, Faculty of Forestry and Wood Technology, Mendel University in Brno, Zemědělská 3, 613 00 Brno, Czechia*

<sup>2</sup> *Department of Forest Management and Applied Geoinformatics, Faculty of Forestry and Wood Technology, Mendel University in Brno, Zemědělská 3, 613 00 Brno, Czechia*

<sup>3</sup> *ATELIER FONTES s.r.o., Křídlovická 314/19, 603 00 Brno, Czechia*

<sup>4</sup> *Faculty of Forestry and Wood Technology, Mendel University in Brno, Zemědělská 3, 613 00 Brno, Czechia*

<https://doi.org/10.11118/978-80-7701-025-2/0320>

### Abstract

The use of forest environments for recreational purposes is becoming an increasingly significant aspect of contemporary lifestyles. The growing number of visitors and the diversity of their activities require effective management of their movements to minimise conflicts among different user groups and with forest management operations. This article focuses on the issue of regulating horse riders' movement, whose activities may interfere with the idea of leisure by other forest visitors and with forest operations. The University Enterprise has initiated discussions with stable owners to regulate riders' movement within the forest environment and collaboratively design a network of equestrian trails within forested areas. This study aims to analyse the current challenges in the management of equestrian activities in forest environments, assess the extent of trail overlap with forest roads and hiking trails, and propose management strategies to mitigate potential conflicts between different user groups and forest operations. The expected outcomes include a deeper understanding of the equestrian trail design and its implications for sustainable multi-use forest management.

**Key words:** horseback riding, leisure activities, forest

### Introduction

Equestrian tourism once considered a less prominent form of recreation (Bambi, 2023, Kozak, 2017, Rezapouraghdam, 2024), has become an integral part of sustainable tourism, prioritizing community benefits over economic gain (Helgadóttir & Sigurdardóttir 2008). With increasing interest, it now plays a significant role in supporting local development and environmental sustainability. However, the expansion of equestrian tourism requires well-planned trail networks that accommodate rising user demands in both urban and natural landscapes. A key challenge is managing conflicts between horseback riders and other trail users, particularly hikers (Beeton 2006, Newsome 2008). Additionally, research highlights the environmental impact of equestrian activities, including trail degradation and potential effects on landscape quality (Newsome, 2008). Solutions such as GIS-based route planning and equestrian infrastructure improvements have been proposed (Bambi, 2023), alongside calls for stronger cooperation between forest management and stable owners (Bambi, 2013, Rezapouraghdam, 2024). Despite these initiatives, a comprehensive, systematic approach to equestrian trail management remains underdeveloped, and the importance of quantitative research is often underestimated (Rezapouraghdam, 2024). Addressing this gap is crucial for effective long-term planning. This article aims to contribute by analyzing current challenges and potential solutions in equestrian trail design and management. Through collaboration between University Enterprise and local stable owners, it seeks to develop a structured approach to trail planning that minimizes conflicts with forest management and other recreational activities. The study focuses on regulating rider movement and designing a well-integrated horseback riding network in forested areas. Key objectives include identifying conflict points and conducting a quantitative evaluation of the spatial relationship between equestrian trails and existing forest roads.

### Area of interest

To address these issues, the University Enterprise commissioned a study to design equestrian trails in the Časnýř voluntary municipal association, focusing on areas frequently used by the Babice stable and other nearby stables, reflecting increasing demand for designated equestrian trails. The 11.8 km<sup>2</sup> study area spans Babice nad Svitavou, Březina u Křtin, and Ochoz u Brna. Located 13 km northeast of Brno in the Dražanská Highlands, Babice nad Svitavou lies within the Moravian Karst Protected Landscape Area, featuring continuous forests and protected nature sites, including the Čihadlo and Březinka Nature Reserves. The landscape consists of a flat karst plateau (Babická Plateau)

transitioning into gently sloping terrain with steep valley inclines, rock outcrops, and narrow ravines. Elevations range from 350 m near Kanice to 493 m at Vysoká.

### **Forest Road Network**

In the area of study, there is a forest road network, which is constructed of forest roads with unsealed wearing courses from vibrated gravel technology. This is the type of a wearing course that suits horses in terms of their movement and this type of surface could be characterised as possible to trot without problems but can only gallop for a short time (Hollý, 2003). The total length of the forest roads in the study area is 8,357 m and roadway width designed to be 4 m in the crown.

### **Recreational Use**

Pedestrian tourism in the peri-urban forests north of Brno has a long-standing tradition, attracting hikers due to its scenic landscapes, well-maintained trails, and cultural significance. The study area is traversed by several marked hiking trails maintained by the Czech Tourist Club, offering diverse opportunities for outdoor recreation. The total length of hiking trails in the study area is 18.784 m, with 6.949 m overlapping forest roads. These forest roads serve multiple purposes, including forestry operations, nature conservation, and recreational access. The high density of trails and shared-use routes highlights the need for effective management strategies to minimize conflicts between different use groups, including hikers, cyclists, and horseback riders.

### **Study Approach and Methodology**

The University Enterprise initiative aimed to address the increasing intensity of equestrian activities on forest land, which may result in conflicts with forest road maintenance, forest management, nature conservation, other recreational activities, and property ownership. According to the Forest Act, horseback riding is permitted on forest roads and designated trails. However, in areas lacking designated equestrian trails, riders are often compelled to use forest roads, which can lead to conflicts with forest management, particularly timber transport. Additionally, horse movement on forest roads may cause damage to the unsealed road surface, while sealed road surfaces may also be unsuitable for the horses themselves. In the absence of designated trails, some riders may traverse forest stands at their own discretion, potentially violating forest regulations and causing ecological disturbances. For equestrian movement in the forest, the primary considerations are nature conservation and the forest transportation network.

The study was conducted by ATELIER FONTES s.r.o. (2021), aimed to develop a methodological framework for the design of equestrian trails. The methodological approach encompassed the following key steps:

- Defining the study area and broader territorial context, including natural conditions.
- Identifying land use constraints such as nature conservation regulations, property ownership, and competing recreational activities.
- Assessing the needs of equestrian users and defining the parameters of equestrian trails.
- Evaluating legal constraints.
- Mapping current equestrian use of forest roads within the study area.
- Identifying conflict zones within the area.
- Conducting an initial field survey.
- Proposing equestrian trails for discussion.
- Preliminary consultation with stakeholders, actors, and interest groups.
- Discussion with the stable owners.
- Conducting a secondary field survey.
- Finalising the proposal for the equestrian trail network.

### **Results**

Through collaboration with the Babice equestrian stable, existing forest roads and trails used for equestrian activities were mapped. Due to the relatively small number of horses housed in Babice and responsible riding behaviour, conflicts with forest management and road damage are rare. However, certain problematic aspects in the design of equestrian trails required further verification:

- The overlap of use with other recreational activities.
- Nature conservation concerns, particularly regarding passage through specially protected small-scale areas or their buffer zones.
- Horses deviating from designated forest roads.
- Complaints from residents regarding the utilization of municipal pathways.

After resolving these problematic areas, the routing of equestrian trails was proposed with respect to the mentioned key areas, with a total of 10.411 m of trails being proposed. Trails were not marked using the Czech Tourist Club methodology. Instead, simple single-color square markers were used, based on the type of trail. The proposed equestrian trails were primarily routed on existing forest roads taking into account minimal conflicts with forest management and other visitor groups, as well as the suitability of the forest road wearing course for horses with a length of 5.536 m. 6.471 m equestrian trails were routed alongside the hiking trails, with 5.522 m marked together on forest roads and 949 m marked together on hiking trails through the forest. Independent equestrian trails within forest stands designated solely just for horseback riding have a length of 3.926 m (Fig. 1).

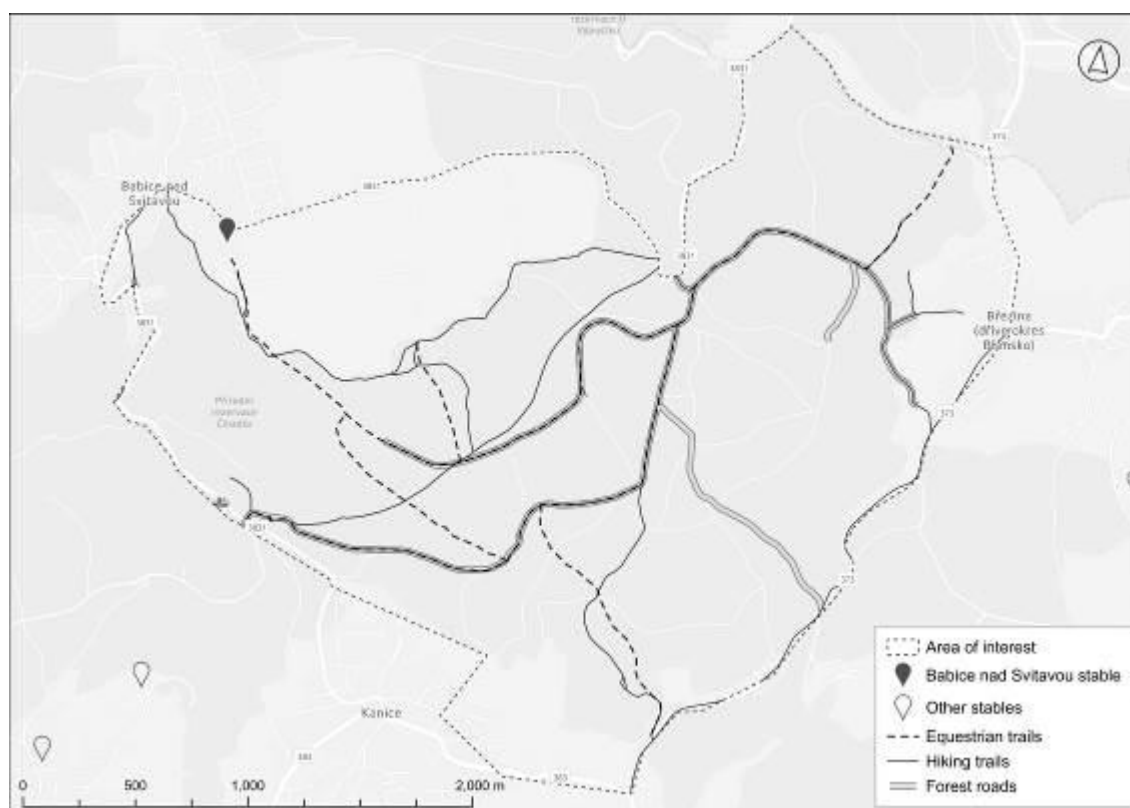


Fig. 7: Proposed equestrian trails in Babice nad Svitavou area

## Conclusion

This study highlights the complexity of managing multi-use forest trails, particularly in balancing the needs of equestrian tourism with other recreational activities and forest management. The identification of conflict zones, effective communication and a fair agreement among all involved parties is essential for balancing different land uses and mitigating conflicts. Future research should focus on long-term monitoring of trail conditions and the effectiveness of mitigation strategies. Additionally, investigating the socio-economic benefits of equestrian tourism could provide a more comprehensive understanding of its role in sustainable outdoor recreation.

Key recommendations include:

- Establishing designated equestrian trails to reduce user conflicts and environmental impact.
- Improving signage and communication to enhance trail user awareness and cooperation.
- Implementing targeted maintenance strategies and allocating responsibility for potential damages.

## References

- ATELIER FONTES s.r.o. (2021). MENDELU ŠLP Křtiny: Studie hipotras na Babicku. Mendelova univerzita v Brně, 35 p.
- Bambi, G., Conti, L., Rossi, G., & Barbari, M. (2023). Promotion of sustainable tourism in marginal rural areas: A GIS database for the planning and the development of equestrian tourism (Case of

- study in Tuscany - Italy). *Geojournal of Tourism and Geosites*, 50(4), 1447-1457. doi:10.30892/gtg.50425-1143
- Bambi, G., Monti, M., & Barbari, M. (2013). New solutions for horse shelters to connect to the equestrian paths. *Journal of Agricultural Engineering*, 44, 178-180. doi.org/10.4081/jae.2013.277
- Beeton, S. (2006). Sustainable tourism in practice: Trails and tourism. *Critical management issues of multi-use trails. Tourism and Hospitality, Planning and Development*, 3(1), 47-64. doi:10.1080/14790530600727227
- Holí, K. (2003). *Jezdecká turistika*. Ostrava: Montanex. ISBN: 80-7225-104-X
- Helgadóttir, G., & Sigurdardóttir, I. (2008). Horse-based tourism: Community, quality and disinterest in economic value. *Scandinavian Journal of Hospitality and Tourism*, 8(2), 105-121. doi:10.1080/15022250802088149
- Kozak, M.W. (2017). Making Trails: Horses and Equestrian Tourism in Poland. In: Adelman, M., Thompson, K. (eds) *Equestrian Cultures in Global and Local Contexts*. Springer, Cham. doi.org/10.1007/978-3-319-55886-8\_8
- Newsome, D., Smith, A., & Moore, S. A. (2008). Horse Riding in Protected Areas: A Critical Review and Implications for Research and Management. *Current Issues in Tourism*, 11(2), 144-166. doi:10.2167/cit336.0
- Rezapouraghdam, H., Saydam, M. B., Altun, O., Roudi, S., & Nosrati, S. (2024). A contemporary systematic literature review of equestrian tourism: emerging advancements and future insights. *Journal of Hospitality and Tourism Insights*. doi:10.1108/JHTI-01-2024-0046

## Souhrn

Článek se zaměřuje na výzvy a možná řešení při navrhování jezdeckých tras v lesních oblastech. Studie si klade za cíl vytvořit strukturovaný přístup k plánování jezdeckých stezek s ohledem na minimalizaci konfliktů s lesním hospodářstvím a jinými rekreačními aktivitami. Hlavní cíle řešení zahrnují identifikaci limitů využití území a analýzu vztahů mezi jezdeckými trasami a stávajícími turistickými trasami a lesními cestami. Absence vyhrazených tras často vede k využívání lesních cest, což může způsobovat konflikty s dopravou dřeva a poškození cestního povrchu. Návrh jezdeckých tras se zaměřil na vymezení tras s ohledem na legislativní omezení, ochranu přírody a potřeby jezdců. Na základě terénního průzkumu a konzultací se zúčastněnými stranami bylo navrženo celkem 10 411 m jezdeckých tras, z toho 5 536 m využívá existující lesní cesty. 6 471 m jezdeckých tras bylo vedeno podél turistických stezek, 5 522 m je vyznačeno společně na lesních cestách a 949 m na turistických stezkách v lese. Samostatné jezdecké trasy určené výhradně pro jízdu na koni mají délku 3 926 m. Trasy byly vyznačeny podle metodiky Klubu českých turistů. Budoucí výzkum by se měl zaměřit na dlouhodobé sledování stavu tras a socioekonomické přínosy jezdecké turistiky pro udržitelnou rekreaci v přírodě.

Klíčová doporučení zahrnují:

- Zřízení vyhrazených jezdeckých tras ke snížení konfliktů a dopadů na životní prostředí.
- Zlepšení značení a komunikace mezi uživateli stezek.
- Cílenou údržbu tras a stanovení odpovědnosti za případné škody.

## Contact:

doc. Ing. Petr Hruza, Ph.D.

E-mail: petr.hruza@mendelu.cz

Open Access. This article is licensed under the terms of the Creative Commons Attribution 4.0 International License, CC-BY 4.0 (<https://creativecommons.org/licenses/by/4.0/>)

