

HOW HIGH ARE THE ECONOMIC BENEFITS OF OUTDOOR RECREATIONAL USE FROM THE NEWLY DESIGNATED PROTECTED LANDSCAPE AREA?

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Abstract

In addition to preserving biodiversity, protected landscape areas provide many ecosystem services to society, including the wide range of opportunities for outdoor recreation. A number of studies have examined the recreation value and other economic benefits of protected areas designated in the past, however less work has been devoted to assessing the economic effects in the case that a large-scale protected area is newly established. This article aims to estimate the change in recreation demand and the resulting regional economic benefits for the Soutok region, i.e. the area where the Morava and Dyje rivers meet, if a protected landscape area of 139 km² is declared here. In the study, the methods of visitor monitoring with non-market valuation methods and input-output analysis are combined to measure the shift in recreation demand and the resulting economic effects induced by this change.

Key words: visitor monitoring, preference survey, travel cost model, choice experiment, input-output analysis

Introduction

The protection of large areas with high natural and cultural value in the form of a protected landscape area (PLA) or national park is important for the preservation of biodiversity and ecological integrity, but also for the maintenance of ecological processes. The result of them is a number of ecosystem services and private and social benefits, including a wide range of opportunities for the realization of many outdoor recreational activities. Protected areas in many countries represent attractive tourist destinations, and visitors with their spending positively affect the regional economies adjacent to these large-scale protected areas.

Although a number of empirical studies provide the estimates of recreation values and other economic impacts for protected areas that have been already established in the past, but less research is devoted to assessing the change in visitation and the induced economic effects if a new protected area is planned to be declared in a given natural area.

The aim of the article is to estimate the change in recreation demand and the resulting economic impacts on the local economy in the Soutok region if a new PLA is declared here. The proposal of nature protection is the designation of the Soutok PLA in the area of confluence of the Morava and Dyje rivers covering floodplain primeval deciduous forests with water and wetland ecosystems and meadows with solitary old trees in total 139 km². The proposed system of nature protection of the Soutok PLA should enable sustainable forest management on approximately 90% of the territory, resulting in uneven-aged forest stands.

Methods and data





Various methods of visitor monitoring (automatic counting devices and personal counting) were combined with non-market valuation methods (travel cost method and choice experiment) to measure the current recreation demand and the demand shift (potential visitation) if a PLA is established in the Soutok area.

Three automatic devices continuously recorded the visitors' passes on the tourist-frequented paths in different parts of the Soutok area during the monitored period, i.e. from the end of October 2020 to the middle of September 2021. In addition, to determine the structure of visitors, the personal monitoring was carried out at 4 monitoring sites during 3 monitoring days in the peak tourist season at the turn of July and August 2021.

In order to analyze the recreation behavior of the Soutok visitors (including their expenditures) and their environmental preferences towards various forms of forest stands representing the proposed variants of nature protection (including declaration of PLA), two surveys were conducted. One survey was realized as a face-to-face survey with a standardized paper questionnaire on a sample (N=250) of current visitors of the Soutok area in the summer of 2021 (on-site survey) and the other as an on-line

questionnaire survey on a sample (N=513) of the Czech general population (off-site survey) in September 2021. The environmental preferences as a person's choice of a forest type under a certain type of nature protection were derived from the discrete choice experiment conducted as a part of both surveys. An example of a choice experiment question is shown in Figure 1.

Imagine the following two nature areas that differ in forest type and distance from your place of residence.

Nature Area 1		Nature Area 2	
Distance from Home	90 km	Distance from Home	30 km
Forest Type:	Uneven-aged Forest in the Protected Landscape Area	Forest Type:	Even-aged Common Commercial Forest
			
			

Which one out of the following two nature areas would you choose for your one-day trip?

Nature Area 1
 Nature Area 2
 I would rather stay at home

Fig. 1: Example of a choice experiment question.

The local economic effects induced by the expenditures of current and potential visitors of the Soutok region were estimated with regional economic multipliers in the structure of spending on accommodation, meals, transport, parking and entrance fees and souvenirs. The effects of the first and second order measured by regional production and regional gross value added (respectively by gross domestic product, GDP) were considered. Direct effects (1st order) represent changes in the economy due to direct visitor spending, indirect effects (2nd order) represent intermediate consumption of primary sectors. The estimation of regional multipliers was based on a cross-sectoral national and regional input-output analysis, for which national and regional symmetric input-output tables were used (CSO, 2015; Fischer et al., 2018).

The research methods and data used are described in detail in Melichar et al. (2021).

Results

In total during the monitored period, 379 thousand of visitors' passes were recorded by automatic counting devices located in the Soutok area. After calibrating visitation records from counting devices and extrapolating them for the entire proposed PLA territory, the total annual visitation (labeled as current visitation) for the analyzed period (i.e. from the second half of September 2020 to the first half of September 2021) amounts to 299 thousand of visitors (in person-days per year). The spatial distribution of annual visitation intensities on tourist paths in the Soutok region is depicted on the map in Figure 2.

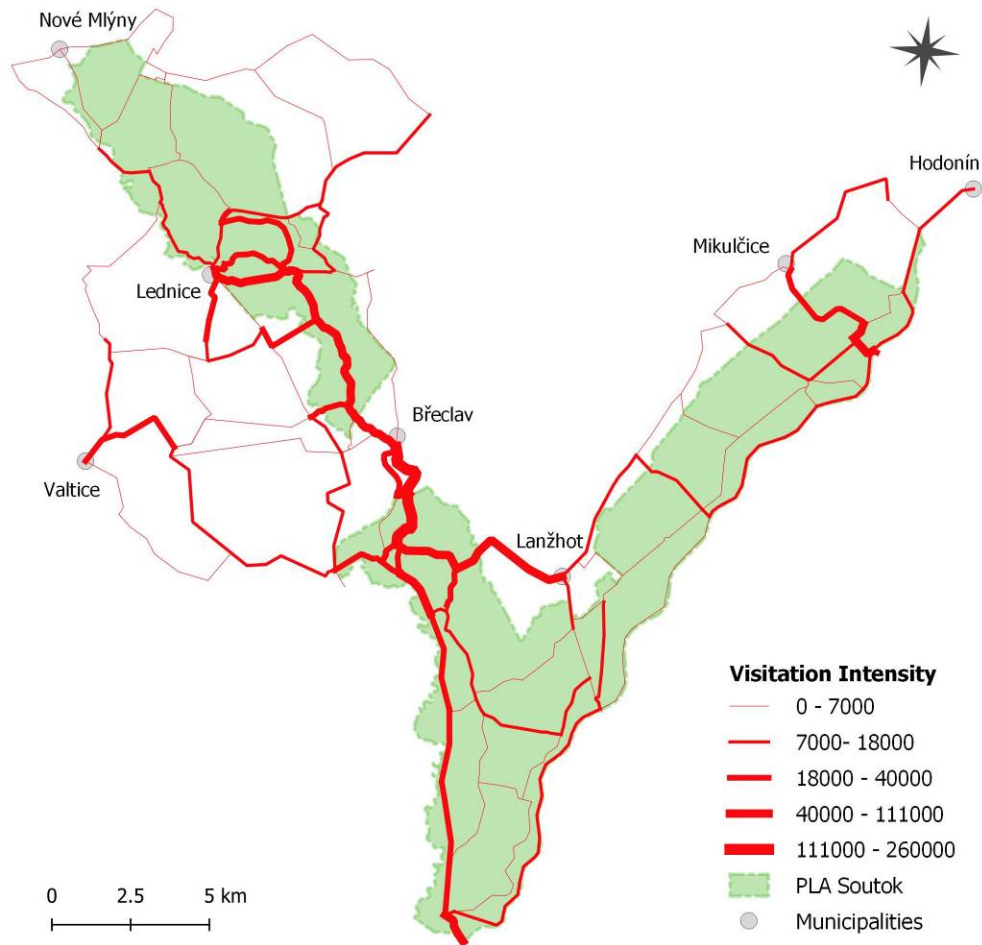


Fig. 2: Map of intensities of current visitation on the tourist paths in the Soutok region (annual number of visitors' passes during the analyzed period 9/2020-9/2021). Source: Melichar et al. (2021)

As graph (a) in Figure 3 shows, the more-day visits account for 64 % of total annual visitation. The more-day visitation was estimated at almost 192 thousand person-days per year.

In the case of declaration of a PLA, the annual visitation of the Soutok region will increase by 48 %, i.e. by 144 thousand of person-days, compared to the current visitation. This positive change in recreation demand is labeled as potential visitation. As a result of the PLA establishment, one-day and more-day visitations will increase by 61 % and 41 %, respectively. After this change, the total annual visitation of the Soutok region, in the sum of current and potential visitation, will be amounted to 443 thousand person-days (see graph (a) in Figure 3).

The current visitors contribute annually to the Soutok regional economy with their expenditures in the amount of CZK 198.1 million (in 2021 prices), of which 94 % are the expenses of more-day visitors. The visitors' expenditures lead to an increase in annual regional production and annual gross value added (or GDP) of the regional economy by CZK 207.2 million and CZK 69.2 million, respectively. The direct and indirect effects of visitors' spending contribute to GDP by CZK 41 million and 28.2 million, respectively.

The growth in recreation demand due to the declaration of a PLA will contribute to an increase in annual regional production by CZK 87.5 million, with CZK 29.3 million is attributed to the increase in regional GDP (see graph (b) in Figure 3). At the same time, more than 74 % of the increase in regional production is contributed by the spending of more-day visitors on accommodation and meals.

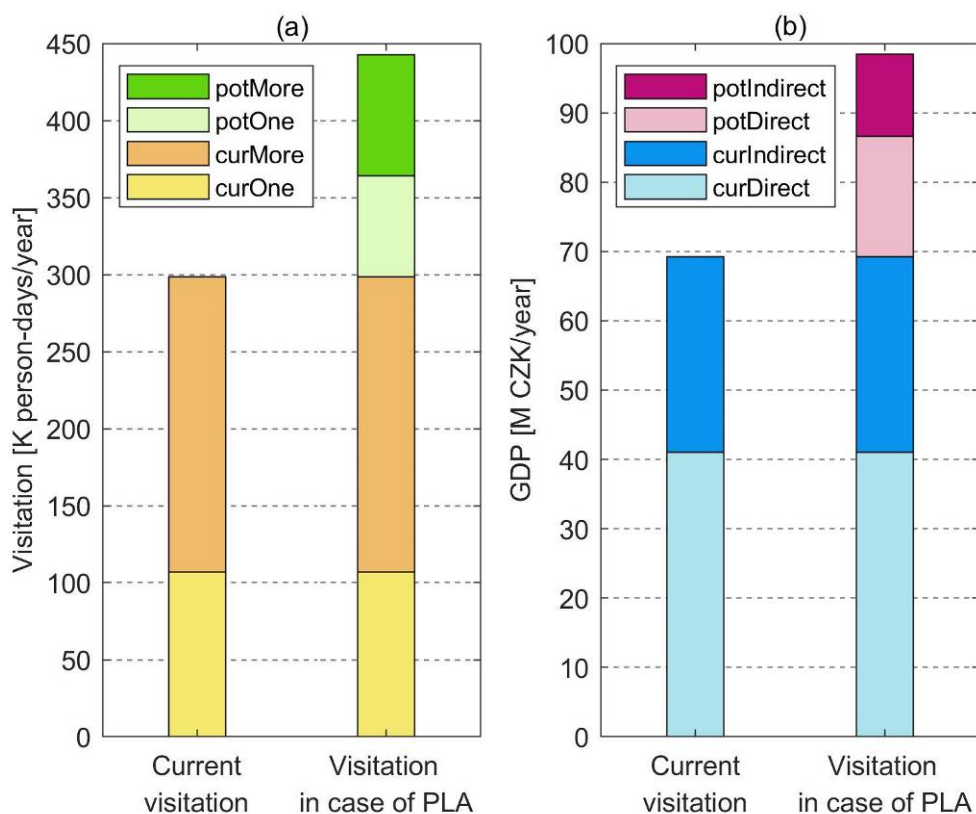


Fig. 3: Annual visitation structured into one-day and more-day trips (a) and creation of gross value added according to direct and indirect impacts (b) at the current state of nature protection and at the declaration of the Soutok PLA.

Note: curOne/curMore – current visitation of one-day/more-day visitors, potOne/potMore – potential visitation of one-day/more-day visitors, curDirect/curIndirect – direct/indirect impacts of the current visitation on the GDP change, potDirect/potIndirect – direct/indirect impacts of the potential visitation on the GDP change.

Conclusion

Outdoor recreation in the Soutok area has been shown to have positive impacts on the regional economy. These positive effects are mainly attributed to more-day visitors. The change in the age structure of forest stands due to the declaration of a PLA will increase the visitation in the area, and thus will generate other beneficial economic impacts. However, the increase in recreation demand can also be accompanied by potential adverse effects (e.g. wildlife disturbance, congestion and increased local cost of living).

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Souhrn

Ochrana rozsáhlých přírodně a kulturně hodnotných území formou chráněné krajinné oblasti či národního parku je významná pro zachování biodiverzity. Je rovněž důležitá pro podporu ekologických procesů, jejichž výsledkem je řada ekosystémových služeb a společenských přínosů, včetně široké

škály příležitostí pro realizování rekreačních aktivit ve volné přírodě. Empirická evidence přináší odhady rekreačních a dalších ekonomických přínosů pro chráněná území, jež byla vyhlášena v minulosti, méně výzkumů se však věnuje posouzení změny návštěvnosti a vyvolaných ekonomických efektů v případě, že dojde nově k vyhlášení velkoplošného chráněného území v dané přírodní oblasti. Tento článek si klade za cíl odhadnout změnu poptávky po rekreaci a z toho plynoucí ekonomické přínosy pro region Soutoku, tedy oblast soutoku řek Moravy a Dyje, pokud zde dojde k vyhlášení chráněné krajinné oblasti (CHKO) o rozloze 139 km². Kvantifikace regionálních ekonomických efektů současné a potenciální návštěvnosti reprezentující změnu poptávky po rekreaci v daném území v případě vyhlášení CHKO Soutok vychází z analýzy kvantitativních a kvalitativních ukazatelů rekreačního využívání oblasti Soutoku a z meziodvětvové národní a regionální analýzy. Výsledky naznačují, že navrhovaná varianta ochrany území v kategorii CHKO přispěje k významnému nárůstu poptávky po rekreaci a s tím spojenému zvýšení celkových výdajů návštěvníků a produkce ekonomiky regionu. Vyhlášení CHKO zvýší roční návštěvnost Soutoku o 48 %, tj. o 144 tis. osobodnů, oproti současnému stavu (299 tis. osobodnů v roce 2021). Růst návštěvnosti a celkových výdajů realizovaných návštěvníky v regionu Soutoku následně přispěje ke zvýšení roční regionální produkce o 87,5 mil. Kč, kdy 29,3 mil. Kč z těchto dopadů připadne na zvýšení hrubého domácího produktu (HDP) regionální ekonomiky Soutoku. Na zvýšení regionální produkce se přitom z více než 74 % podílí výdaje vícedenních návštěvníků vynaložené na ubytování a stravování.

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