

Using Visitor Monitoring to Reduce Ecological Impacts Due to Picnicking and Grilling in Urban Forests in the Vicinity of Basle, Switzerland

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Introduction

Outdoor recreation in urban forests has increased in recent decades, leading to ecological conflicts, such as trampling damage to the ground vegetation and soil compaction, making management actions and well-founded recreational planning necessary in highly frequented areas (Baur 1999, Baur et al. 2003). In order to achieve satisfactory results, management decisions should preferably be based on information provided by visitor monitoring, rather than on managers' intuition alone.

A common outdoor activity in Switzerland is picnicking and grilling. The usage of fire rings outside official picnic sites can lead to soil compaction, a reduction of vegetation cover and changes in the soil seed bank (Amrein et al. 2005). The extensive damage in certain highly frequented forest areas is making measures necessary.

Methods

In our study area (an oak-hornbeam forest) in the vicinity of Basle in north-western Switzerland, we are using data from two surveys to develop appropriate management actions in order to reduce ecological impacts caused by picnicking and grilling. In order to develop measures, it is important to find out why forest visitors build fires outside picnic sites. Therefore, we conducted a survey in two forest areas and questioned 214 forest visitors picnicking and grilling, half of them at official sites

and half of them at "wild" fire rings. We also conducted a postal survey aimed at forestry officials, foresters and public forest owners in the whole of Switzerland. 562 experts returned a completed questionnaire.

Results

The results of the survey aimed at forestry experts show that picnicking and grilling are among the most frequent activities in the whole of Switzerland. When asked about the reasons why forest visitors might create their own "wild" fire rings, most respondents stated that visitors might be looking for adventurous or romantic spots or simply might want to be alone. Respondents also thought that there were probably not enough official picnic sites and that woody debris lying around might animate visitors to build a fire. Only a minority attributed self-made fire rings to an unattractive location or unattractive infrastructure of existing picnic sites (Fig. 1).

The survey conducted in the forest itself showed that visitors using official picnic sites differ from visitors using fire rings outside official sites, especially in their preferences concerning location and infrastructure. Visitors using "wild" fire rings preferred sites away from forest service roads with infrastructure as natural as possible (no concrete barbecue pit, tree trunks to sit on) and possibilities for children to help build the fire by collecting wood and stones for the ring.

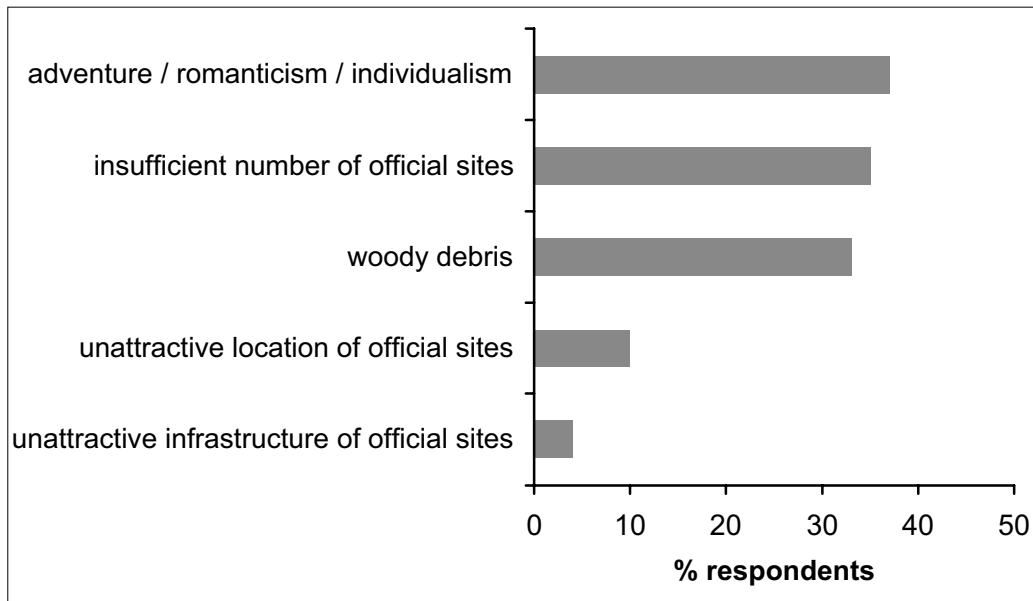


Figure 1: Reasons for creating and using self-made fire rings outside official picnic sites.

It can be concluded that picnickers are not a homogenous group of forest visitors. Existing picnic sites meet the requirements of a subset of picnickers. Other visitors do not want picnic sites with a lot of infrastructure near car parks and forest service roads. Visitors wanting more natural surroundings fulfil their requirements by creating their own fire rings. This behaviour can lead to uncontrolled trampling damage in previously untouched forest areas and contribute to the degradation of already heavily used areas.

Visitor management in Switzerland already includes installing new recreational infrastructure such as barbecue pits, but location and infrastructure are usually based on tradition, intuition of forest managers and practicability rather than on visitor preferences. Based on our results, we recommend providing some picnic sites that are closer to the requirements of visitors that have steered away from official sites up to now, but that do not necessarily want to be in a remote area. As new sites can be installed away from ecologically sensitive areas, these measures should reduce the number of self-made fire rings being created in the sensitive forest area and hereby also reduce ecological impacts by picnicking and grilling away from picnic sites.

References

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