

Are There Too Many Visitors in National Parks? A Campsite Analysis in Two Finnish National Parks

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Introduction

Nature-tourism is one of the fastest growing industries and often concentrates on pristine environments like national parks. As the amount of visitors increase, nature is exposed to more extensive wear, which may threaten the conservational value, as well as the recreational value of these areas if the change is not under control.

The major and visible impact of recreation is mechanical trampling of vegetation. Ecological changes are inevitable even after short-term trampling (Tolvanen et al. 2001, 2004). Due to trampling the original species are often replaced by more tolerant species and moreover, alien species can be carried along by visitors and pose a threat to native vegetation. In Finland many National Parks are concentrated in north, where environmental factors set limitations to the recovery of the vegetation after disturbance. It is important to identify sensitive environments and species when planning new trails and campsites. Monitoring techniques for campsites have been developed particularly in North America (Cole 1989, Hammit & Cole 1998).

Also in Finland a few studies have been made concerning the impacts of recreation on vegetation in campsites (e.g. Rautio et al. 2001). Yet, there is a need for more detailed studies in a variety of environments for developing a reliable and cost-effective technique for campsite monitoring in Finnish National Parks.

We studied the effects of increasing tourism on the vegetation at campsites in two National Parks in Northern Finland; Pallas-Ylläs NP (summer 2003) and Oulanka NP (summers 2005-2006). The main focus was in the following questions: What is the size of the areas with visible changes in vegetation? How do the number of visitors, campsites age, vegetation type, number of trails in the campsite and distance between campsite structures affect quantity of changes?

Methods

We surveyed 39 campsites with varying structures. Wilderness huts, campfire sites, lean-to shelters and Lapp pole tents situated along trails were considered as campsites. From campsites areas with

visible changes in vegetation were measured and separated into two zones; (I) zone with destroyed vegetation cover and (II) zone with continuous vegetation cover but clearly affected by trampling. From each campsite two main structures (e.g. campfire site, wilderness hut) were chosen as mid-points. From each point transect lines were directed to each cardinal and half-cardinal points. From transects the species composition and percentage of vegetation coverage was estimated in different zones with 50x50 cm square frames and compared to undisturbed areas. Visitor numbers were estimated with electronic counters, guest books and questionnaires.

Results

The visitor number and vegetation type had a significant impact on the size of the area disturbed. Moreover, the size was relative to distance between wilderness huts and campfire sites. The most sensitive vegetation types were mountain heaths and dry pine forests. Trampling tolerance of vegetation types was mainly explained by vegetation composition. Dwarf shrubs were sensitive to trampling and disappeared quickly from the intensively used areas, whereas graminoids were more tolerant. Among mosses and herbs there were both sensitive forest species and tolerant secondary species. In all campsites there were species, which have been carried along by hikers and were alien to the original biotope.

In future, the areas affected by trampling in campsites of national parks should be measured regularly. Also the alien species in campsites should be monitored and removal of aggressive invasive species should be considered. When planning new campsites the most sensitive biotopes should be avoided. The size of the disturbed area can be affected by careful planning of the locations of structures. The buildings should be constructed closer to each other or campsites can be established on already trampled areas like hiking trails.

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