

A management perspective on using Public Participation GIS to monitor visitors

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Academics have frequently used and endorsed the Public Participation (PP)GIS approach for national park management. However, the decision-support potential of PPGIS is mostly described in academic literature, and there is only little evidence of formal agency adoption beyond preliminary PPGIS trials. Globally, Finland has been one of the leading countries in adopting PPGIS, and it has been shown that impediments to adopting place-based tools exist in Finland as well. The explanations as to why regional and environmental planning agencies have not adopted PPGIS methods in their planning processes often point to a lack of government commitment to public participation and consultation in general, as well as lack of skills and institutional motivation to use the data effectively (Brown 2012; Brown & Kyttä 2014; Kahila-Tani et al. 2016). These issues are, however, researchers' interpretations of the constraints and there is a lack of studies investigating managers' willingness and readiness to adopt these methods. Therefore, to promote PPGIS methods to be spread from academia to practise, it is important to study the impediments to the adoption of PPGIS in the public sector.

In this study, we assess the potential of PPGIS approaches from managers' perspectives in the context of visitor use planning in national parks. The aim is to increase the understanding of how the PPGIS method could aid the planning for visitor use in parks and related recreation areas. The research questions of this study are (1) How do the managers of Parks and Wildlife Finland plan the visitor use of national parks, and how could place-based information on visitor experiences support these planning practices? (2) How would managers prefer implementing place-based monitoring of visitor experiences? (3) What are the attitudes of the managers with respect to place-based planning practices?

Interviews with park managers

This research is based on ten semi-structured interviews with representatives from Metsähallitus within its Parks and Wildlife Finland unit. The interviews took approximately one hour each, and focused on visitor management of national parks and the available information related to visits to parks. Moreover, managers were asked to evaluate the usefulness and benefits of place-based information on visitor experiences, based on six thematic maps representing visitors' experiences in Oulanka National Park, one of the most visited parks in Finland. The maps were created based on spatial data collected in Oulanka National Park in 2014 (Pietilä & Fagerholm 2016; Pietilä 2017), depicting the spatial distributions of use, outcomes of visits, special places, visitor perceptions of the negative impacts of tourism (such as littering or crowding), sites where visitors felt unsafe, and development needs regarding the park's infrastructure.

Results and discussion

The potential purposes of place-based monitoring

Managers considered their main tasks related to visitor management to be coordinating visitor use across and within the parks, and optimizing the conditions that visitors encounter in parks. To serve visitor coordination, place-based data could help to define recreation

opportunities from the perspectives of visitors, and could inform where possible conflicts between different types of users take place. To optimize the conditions in the parks, PPGIS could highlight the possible differences in opinions that visitors and managers have with regards to site conditions, enabling the targeting of management actions to the sites most critical to visitor satisfaction. Moreover, managers had some interest in integrating PPGIS tools with the Limits of Acceptable Change (LAC) framework, which would improve the preciseness of this practise.

Implementing place-based monitoring

Reflecting on the maps that illustrated place-based data on visitor experiences, managers prioritized mapping the most concrete spatial attributes which are closely linked to planning site management actions. These attributes represent visitors' perceptions of the negative impacts of tourism, sites where visitors feel unsafe, and development needs regarding the park's infrastructure. From a technical perspective, managers suggested a place-based mobile phone application in which customers could map the above-mentioned attributes while visiting the park.

Attitudes and challenges

This study showed that the managers of Parks and Wildlife Finland are eager to understand customers' experiences and wish to include visitor perspectives into park management. This finding is contrary to suggestions that the lack of commitment to public participation and consultation in general would hinder applying PPGIS methods. According to this study, the challenges related to using place-based data are more connected to handling and taking advantage of the already existing visitor data, and the possibility of integrating the "new type of data" with existing monitoring processes that have received an institutionalised position. Moreover, even though only a few managers raised the issue related to technical challenges of analysing PPGIS data, beyond creating visual presentations, these are potentially important when integrating PPGIS data into planning processes. Therefore, there is a need to further develop professional analysis interfaces that can automatically quantify those spatial attributes that are evaluated to improve the management of outdoor recreation in parks.

References

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