CAN SOCIAL MEDIA DATA SUPPORT CONSERVATION SCIENCE AND PRACTICE?

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INTRODUCTION

Social media data have been extensively used in numerous fields of science, but examples of their use in conservation science are still very limited. We suggest that social media data could provide a novel source for collecting information on threats, such as land use pressure or hunting, and conservation opportunities, such as nature-based tourism (Di Minin et al. 2015). Collecting such data with traditional methods (surveys, interviews) is expensive and resources are inadequate. Here we present preliminary results of our project concentrating on developing the use of social media data for analyses of spatial patterns and mobility of individuals in the context of nature-based tourism and conservation.

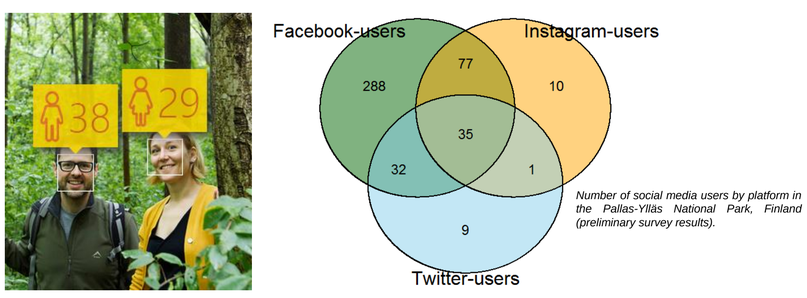

Figure 2. Social media user profiles, selfie-pictures and geotags may provide information about who the users are.

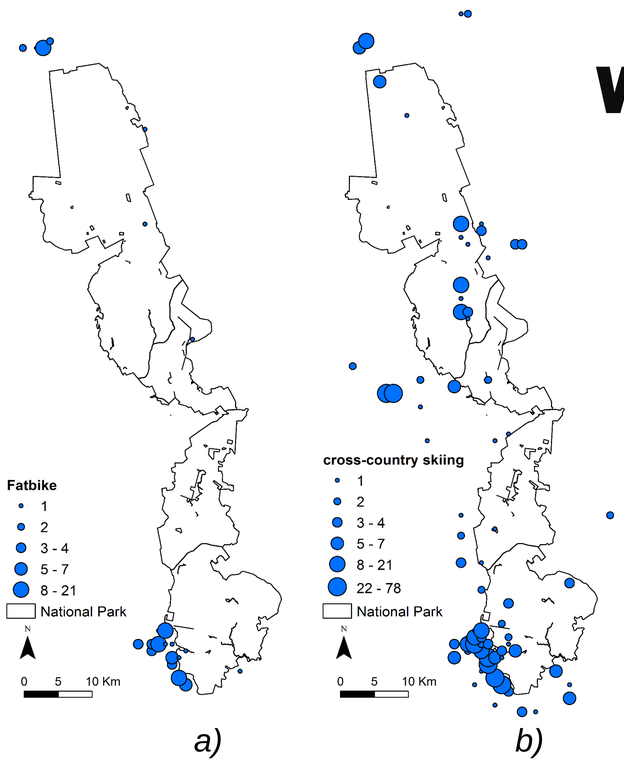

Figure 4. Instagram posts from the Pallas-Ylläs National Park, Finland, with the text or hashtag a) "fatbike", or b) "hiihto" (finnish for cross-country skiing).

Figure 1. Social media may be useful in understanding the spatiotemporal patterns of people, but also provide deeper understanding on who they are and what do they value.

RESULTS

The results show a clear correlation between official visitor counts and the number of social media users in the parks. When evaluating park popularity based on yearly numbers of social media users and official visitor statistics, the rank correlation is relatively high both in Finland (with Instagram 0.69) and South Africa (with Flickr 0.91). Monthly visitation patterns can be assessed in parks with a high number of social media users (Figure 5). Content analysis revealed that social media posts correspond to the studied preferences of people, although easily photographed targets are overrepresented (Figure 3). Preliminary results also suggests that the data can provide information on mobility patterns of people.

METHODS

We collected all openly published, geotagged Instagram and Flickr posts from 2014 and 2015 from the national parks of Finland (N=38) and in South Africa (N=16). We counted the yearly and monthly number of social media users in each park and compared those to the official visitor statistics provided by Metsähallitus and SanParks. We took Pallas-Ylläs National Park and Kruger National Park as examples for content analysis. From Kruger, we classified 30 000 Instagram photos based on their content. We then compared the photo content to previously surveyed preferences of tourists.

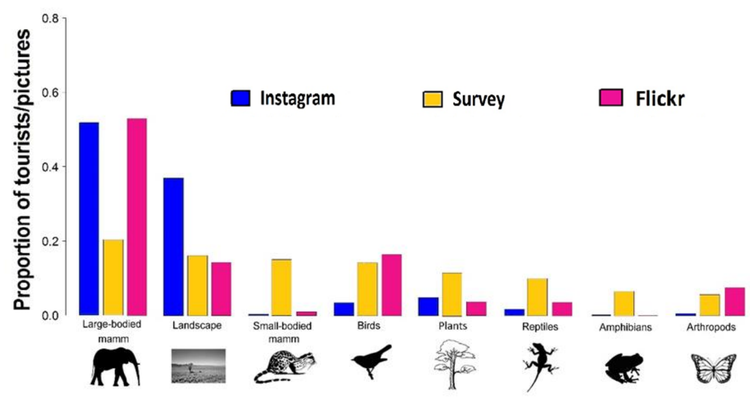

Figure 3. Comparison of tourists' preferences for biodiversity in the Kruger National Park, South Africa, based on survey results and pictures posted in social media.

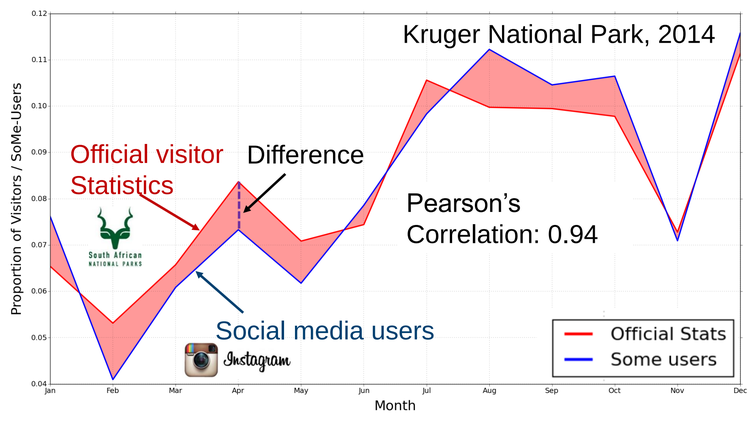

Figure 5. The relationship between the recorded number of visitors (red line) and social media users (blue line) within the Kruger National Park, South Africa in 2014.

CONCLUSIONS

Our results suggest that social media data may act as an additional information source for conservation science and management. Social media data is a particularly useful for understanding nature-based tourism. It may also provide more general information about the spatio-temporal patterns and preferences of people. Using these data for scientific purposes requires consideration of ethics and biases.

LITERATURE

Di Minin, E., Tenkanen, H. & Toivonen, T. Prospects and challenges for social media data in conservation science. Front. Environ. Sci. 3, (2015).

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