Social media data could contribute to conservation science

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Planning conservation actions requires up-to-date information on Biodiversity is diminishing at unprecedented rates, and quick decisions are needed in what and where to protect.

"The decisions should be based on comprehensive information, but scientists do not have enough resources to collect more data and effectively monitor all species and habitats that need protection. As human are the main driving force of global change, conservation also needs information on human presence and behaviour" says Enrico Di Minin, a researcher in conservation science at the Department of Biosciences, University of Helsinki, Finland.

Using the data produced by the nature enthusiasts is considered as one of the ways to effectively collect supportive data when resources are limited. An important limitation, however, is that citizen science requires systematic organization, marketing, commitment, and skills, so it is mostly focused in the developed world.

Researchers from the University of Helsinki argue that mining freely-available data from social media platforms could help address some of these issues. Social media platforms provide a place for sharing biodiversity-related content and posts on nature experiences.

Such posts include a wealth of information about what users find meaningful to post about. They may reveal species people have spotted or tell which landscapes they like. Content of the posts may also reveal

why users were visiting specific locations. The profiles and contents of social media users can be used to extract background information about who the users are, including their country of origin, the language spoken, and gender.

Getting to the public content doesn't need special equipment.

"The public content of most social media platforms can be accessed via ready-made application programming interfaces. In addition to the text and images, the posts often have coordinates and a time stamp that can be used in analyses," says Henrikki Tenkanen, a PhD student in geoinformatics at the University of Helsinki.

Social media data may be useful for example for managers in national parks. "It can give additional information on where and when tourists visited national parks, and provide information on their activities and preferences," says Dr. Tuuli Toivonen, a tenure track professor in geoinformatics. "In some cases, it could be used to collect information on the mobile populations of species, at higher accuracy than traditional sources of data. National parks could increasingly encourage their visitors to post about their experiences, with a common hashtag."

The researchers point out that there are challenges that need to be considered when using social media data. Ethical concerns have also to be taken into account.

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