Tourism monitoring in Antarctica - Development of a concept for the analysis of the impacts of tourism on the assets to be protected in the Antarctic

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**Information Paper submitted by Germany**

Summary

Rising tourist numbers and the diversification of tourist activities potentially have an increasing impact on the Antarctic environment. The sensitive Antarctic ecosystem - already severely threatened by climate change - is exposed to increasing pressure from human visitors, the consequences of which is unknown and can hardly be assessed. A comprehensive knowledge base on the environmental impacts of tourism and therefore on the effectiveness of different management measures is lacking. The German Environment Agency (UBA) therefore initiated a research project to develop a monitoring concept to investigate and monitor the long-term impacts of tourism in Antarctica.

Background

Antarctic tourism has rapidly increased in quantity in the last decades. Tourist numbers reached a new peak in the 2019/2020 season with nearly 75,000 tourists visiting Antarctica. The upward trend is expected to continue in the coming decade due to new cruise ships coming into service and the climate change induced extension of the travel season. Besides, new tourism activities are emerging with the diversification of Antarctic tourism. The Antarctic ecosystem is highly sensitive due to the isolation of the Antarctic continent and the extreme conditions under which flora and fauna evolved. Human activities in Antarctica therefore have the potential to affect and damage the sensitive ecosystem or some individual components. While some human impacts are well studied, such as changes in penguin and seabird populations or individual effects on specific species, others remain un- or understudied. Due to the lack of a systematic and comprehensive long-term monitoring program, the overall impacts of human activities are poorly understood.

The risks of a further increase in tourism are thus almost incalculable. For many years, Antarctic Treaty Parties have been discussing ways to manage Antarctic tourism efficiently and sustainably. However, this is hardly feasible without a solid data basis on the concrete impacts of tourism activities. In particular, cumulative or indirect effects cannot be identified or specified without long-term monitoring. The tourism study of the Committee on Environmental Protection (CEP) of the Antarctic Treaty Consultative Meeting (ATCM) of 2012 already gives the recommendation (Recommendation 6):

"*Consideration should be given to establishing an ATCM-approved on-site monitoring program to i) assess the effectiveness of the Site-specific Guidelines and ii) monitor impacts.*"

To date, however, the Parties have not been able to agree on such monitoring.

The Antarctic Treaty System forms the legal basis for all human activities in the Antarctic. In Germany, the protection of the Antarctic environment and its dependent and associated ecosystems is stipulated in Article 1 of the Act implementing the Protocol of Environmental Protection to the Antarctic Treaty (AUG). Despite the exceptional importance of tourism compared to other human activities in Antarctica, targeted regulations for tourist activities are still lacking. Therefore, UBA commissioned a research project with funding from the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection to develop a relevant concept.

Aim and subject of the project

In this project, the effects of Antarctic tourism on the assets to be protected as defined in the Protocol on Environmental Protection to the Antarctic Treaty (the Protocol) will be investigated and a comprehensive long-term monitoring concept for frequently used tourist sites in the Antarctic will be developed.

UBA, as representative of Germany in the CEP, will make the results of this project available to the community of Antarctic Treaty Parties and thus contribute to the further development of international environmental protection in the Antarctic.

Planned work

The project entails the following work packages:

* Research and summary of monitoring projects already carried out on the environmental impact of Antarctic tourism. Existing knowledge on the impacts of tourism activities on the Antarctic environment and, in particular, on the assets to be protected according to Article 3, para. 2 b of the Protocol should be systematically compiled and evaluated. In addition, citizen science projects should be included in the research and evaluated accordingly.
* Planning and holding of two international workshops. Within the framework of the project, two workshops are to be planned and carried out to involve stakeholders from science, competent authorities, the tourism industry and NGOs. The aim of the workshops is to jointly discuss possibilities for establishing a systematic and Antarctic-wide monitoring from the perspective and with the respective experience of the stakeholders, in order to identify, at an early stage, realistic options and to involve later user groups in the planning of the monitoring concept.
* Developing a comprehensive monitoring concept on the environmental impacts of Antarctic tourism. The focus of the project will be on this work package in order to compile a toolkit of monitoring measures specifically adapted to Antarctica. The toolkit is to be suitable for systematically identifying and assessing the possible effects of tourism activities on the assets to be protected in the Antarctic in the long term. All forms of tourism are to be considered. Discussions and results of the two workshops are to be included in the development of the monitoring concept.

Firstly, suitable indicators that represent different assets to be protected in the Antarctic and are verifiable across Antarctica are to be identified. In the next step, methods are to be selected according to the identified indicators, with which the state of the environment can be determined and permanently verified. The spectrum of monitoring methods is to be kept intentionally broad. Remote sensing methods such as satellite or drone technology, camera monitoring, sampling, on-site inspections, citizen science projects, etc. are to be included in the considerations. The analysis of acquired data and how it could be made generally accessible should also be considered. In addition, different user groups (scientists, expedition personnel of the tour operators or tourists themselves) can be involved in the collection of data, which has to be considered for the development of a monitoring concept. Furthermore, suitable sites with different visitor numbers as well as reference areas should be suggested for monitoring. Moreover, a cost calculation for the individual measures should be integrated into the monitoring concept.

Timeframe

The project has started in September 2021 and will end in September 2024.

All parties are invited to participate in the project. The first of two workshops will take place on 28 May 2022 during the ATCM. Further information can be obtained at the following website: <https://tourism-monitoring-antarctica1.fresh-thoughts.eu/>.

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