Towards adaptive and sustainable management of Antarctic tourism: Monitoring as a key tool for decision-making

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Working paper submitted by Spain, Ecuador and the United States

***Summary***

Tourism and non-governmental activities in the Antarctic have grown steadily since they began in the 1960s. The only interruption in this growth curve reflects the almost total discontinuation of said activities in the 2020-2021 season due to the SARS-CoV-2 pandemic. The ATCM, in recommendations IV-27 and VI-7, recognized that tourism activities could jeopardize the conduct of scientific research, hinder the conservation of fauna and flora, and do lasting damage to the Antarctic environment. However, adaptive monitoring programmes that provide data to conduct analyses of these possible impacts -which could lead to more adaptive and sustainable tourism management-have not been developed.

The identification, monitoring, analysis and mitigation of the environmental impacts that might be generated by such activities would be effective tools for ensuring the sustainability of tourism in the Antarctic. In this paper, Spain, Ecuador and the United States proposes that the Parties promote the establishment of monitoring programmes that would provide data by which to evaluate the impacts of tourism.

***Introduction and analysis***

The management of Antarctic tourism has been addressed repeatedly, both at the ATCMs and through the system’s different tools (Cajiao et al. 2021[[1]](#footnote-1)). At ATCM XLIII, the, *“Manual of Regulations and Guidelines Relevant to Tourism and Non-Governmental Activities in the Antarctic Treaty area”* was adopted, as a tool to guide competent authorities in their management of tourism activities with the aim of ensuring that non-governmental activities in the Antarctic are conducted pursuant to the Antarctic Treaty and its Protocol on Environmental Protection, Decision 6 (2021). However, as yet no comprehensive and adaptive management initiatives that prioritize the implementation of efficient, long-term monitoring programmes, which would provide relevant information for decision-making regarding such activities, have been established.

The recent publication of the article *“What are the real environmental impacts of Antarctic tourism? Unveiling their importance through a comprehensive meta-analysis”*[[2]](#footnote-2) indicates the need to establish monitoring programmes that enable the quantification of the real impact of tourism activities on Antarctic ecosystems.

The aforementioned article provides data underscoring a number of requirements with regard to the identification, management and monitoring of environmental impacts attributable to tourism. Some relevant considerations are detailed below:

* The scientific literature has identified numerous potential impacts arising from tourism. However, to date, many of these theoretical impacts have not been supported by scientific studies involving field data collection. A lack of research properly quantifying the effects for particular impacts, contaminants, sites or species has also been identified. One recommendation for remedying this situation would be to make greater use of statistical tools combined with mathematical modelling to attempt to detect environmental impacts associated with tourism and not other factors such as environmental variability, global contaminants from outside the Antarctic, or even natural causes.
* It would be important to distinguish between impacts resulting from tourism from those resulting from national programs, either through scientific research and operational activities or national program participants engaging in tourist activities.
* Any monitoring programme implemented must consider cumulative impacts and the possible interactions between the impacts detected and other factors of global change, such as contaminants, the introduction of non-native species, or climate change effects on Antarctic environments.
* To date there has been no development of systematic, permanent—long-term—monitoring programmes focusing on the environmental impacts of tourism in the Antarctic and based on the detection of evidence that is directly relevant and useful for decision-making by the competent authorities.
* To complement the analysis of the impacts of tourism, it is considered essential to evaluate the effectiveness of the management measures regulating these activities that have been applied to date. Such an evaluation would make it possible to determine existing management measures have been effective at limiting the impact of tourism on the Antarctic environment.

***Conclusions and Proposal***

To advance towards an adaptive and sustainable management of Antarctic tourism and to fill in the information gaps detected in the programmes monitoring tourism activities in the Antarctic carried out to date, the following actions are proposed:

1. That the Parties promote the establishment of monitoring programmes to assess the actual impacts arising from tourism activities.
2. That the Committee for Environmental Protection (CEP) promote the development of these monitoring programmes and continue with its work to understand the cumulative impacts of tourism on the environment.
3. That monitoring programs involve multiple stakeholders, including bodies such as SCAR, COMNAP and IAATO, which can contribute to the development and implementation of monitoring programmes
4. That monitoring programmes consider the needs identified in this document.

1. Cajiao, D.; Benayas, J.; Tejedo, P.; Leung, Y.-F. Adaptive Management of Sustainable Tourism in Antarctica: A Rhetoric or Working Progress? Sustainability 2021, 13, 7649. https://doi.org/10.3390/su13147649 [↑](#footnote-ref-1)
2. Tejedo, P., Benayas, J., Cajiao, D., Leung, Y. F., De Filippo, D., & Liggett, D. (2022). What are the real environmental impacts of Antarctic tourism? Unveiling their importance through a comprehensive meta-analysis. *Journal of Environmental Management*, 308, 114634. [↑](#footnote-ref-2)