Topics and target audiences on education and outreach activities by the Antarctic Treaty Parties: a review

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Information Paper submitted by Portugal, Belgium, Bulgaria, Chile, Spain, United Kingdom, WMO

*Summary*

This paper evaluates the key topics and their target audiences mentioned by the Parties, Observers and Experts in their ATCM papers that relate to education and outreach. Since the Antarctic Treaty entered into force in 1961, a total of 200 ATCM papers on education and outreach have been produced. The number of papers has increased since the 1990s, during which time the Protocol on Environmental Protection entered into force. The topics addressed most in the ATCM papers were “science” and “wildlife/biodiversity/environment”. The target audience for most of the reported education and outreach activities were the general public and those attending schools and Universities. Since the first workshop on education and outreach in 2015, and the subsequent establishment of the ATCM Intersessional Contact Group on Education and Outreach, the number of ATCM papers on education and outreach has increased, as has the level of information sharing by Parties. We encourage further work on education and outreach, including through the ATCM Intersessional Contact Group on Education and Outreach.

*Background*

Education and outreach has been an element of the ATCM and CEP multi-year strategic work plans since 2015. This was due to the workshop on education and outreach at ATCMXXXVIII in Bulgaria (2015) that aimed to provide greater visibility of Parties’ public education and outreach activities (ATCM XXXVII/WP009). Thirty-seven Parties, Observers and Experts (ATCM XXXVIII/BP26, report ATCM XXXVIII Paragraph 323) attended the workshop, whose outcome was the establishment of an Intersessional Contact Group on Education and Outreach that has subsequently demonstrated an increased interest and active engagement in education and outreach activities by ATCM Parties, Observers and Experts (ATCM XXXIX/WP24, ATCM XL/WP24, ATCMXLII/WP33, ATCMXLIII/WP15, ATCMXLIV/WP23). While the increasing trend in the number of ATCM papers has been described previously (ATCM XLIII/IP32)(Xavier et al. 2019), this paper aims to provide an overview of the key topics mentioned in the ATCM papers and their target audiences.

*Growth in the number of papers on Education and Outreach in relation to their topics and target audience*

A search for the words “education” and/or “outreach”, as well as papers within the category “Educational Issues”, at the documents page of the Antarctic Treaty System (<http://www.ats.aq)>, between 1961 and 2022 (noting that there was no ATCM in 2020) was carried out. For each ATCM paper, key topics (i.e. “cooperation”, “wildlife/biodiversity/environment”, “science”, “climate change”, “ATS/Protocol legislation”; “Equity, Diversity and Inclusion”) and audiences (“Policy makers”, “Antarctic personnel”, “Artists”, “Journalists”, “Public”, “Schools (inc. Universities)”), and references to the Association of Polar Early Career Scientists (APECS) and Polar Educators International (PEI), were identified.

A total of 200 ATCM papers were submitted to ATCMs between 1961 and 2022 (Figure 1) that related to education and outreach. Up until the 1990s, most delegations considered education and outreach a low priority. With the implementation of the Protocol on Environmental Protection to the Antarctic Treaty (1998) and the establishment of the Intersessional Contact Group on Education and Outreach (2015), there has been an increasing number of ATCM papers on the topic of education and outreach (Figure 1). Indeed, the number of papers submitted during 2021 and 2022 almost reaching the same number submitted to ATCMs during the period 2010-2014. The peak in number of ATCM papers on the topic during the period 2015-2019 is attributed to the education and outreach workshop held at ATCMXXXVIII in Bulgaria and subsequent submissions in the years thereafter.

***Figure 1.*** *Number of papers submitted to the Antarctic Treaty Consultative Meetings between 1961 and 2022 (grouped by 5-year clusters; e.g. 1960 = 1960–1964). Data obtained from a search on “education” and/or “outreach”, and within the category “Educational issues” at the documents page of the Antarctic Treaty System website (*[*http://www.ats.aq/)*](http://www.ats.aq/)) *(following Xavier et al. 2019). Note: the data for “2020” (in red) includes only data for 2021 and 2022 (whereas all other clusters include 5 years of data).*

Over half (54%) of Parties, Observers and Experts published at least one ATCM paper on education or outreach, which included 83% of the Consultative Parties, 31% of the non-Consultative Parties, 100% of Observers and 31% of Experts (see Appendix 1). Those Parties that produced the most ATCM papers were Chile (21%), the United Kingdom (10.5%), Bulgaria (9.5%), Brazil (9.0%), Portugal (9.0%) and Belgium (7.5%). The topic most commonly addressed in the ATCM papers was “science” (75.5%) and “wildlife/biodiversity/environment” (74.0%). Only 57% of the ATCM papers aimed to provide information concerning “ATS/protocol legislation” (Table 1). “Equity, Diversity and Inclusion” seemed to be little addressed, being mentioned in only 2% of all ATCM papers.

In terms of targeted audiences, most ATCM papers included activities directed to the “public” (80.0%) and to schools, including Universities (68.5%). When comparing the periods 1961-2014 (pre-establishment of the ICG on Education and Outreach) and 2015-2022 (post-establishment of the ICG on Education and Outreach), ATCM papers on education and outreach focused more on “research” (+16.5%), “ATS/protocol legislation” (+ 11.0%) , “cooperation” (+8.5%) and “climate change” (+8.0%) in the later period (Table 1). APECS (+10.5%) and PEI (+4.5%) were also mentioned more in the later period as organizations did not exist until recently (I.e. APECS was founded in 2007 and PEI in 2012) (Table 1).

The importance of sharing information related to education and outreach is now recognized by most ATCM Parties, Observers and Experts, as illustrated in the ATCM/CEP multi-year strategic work plans. The number of papers submitted to the ATCM on education and outreach has greatly increased, particularly in recent years, due to the increased priority given to these issues by Parties and by the contribution of the ATCM ICG on Education and Outreach.

***Table 1.*** *Percentage of the total number of ATCM papers submitted to the Antarctic Treaty Consultative Meetings between 1961 and 2022 (n=200) that mentioned a range of topics targeting determined audiences.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Period | Topics | | | | | |
|  | Cooperation | Wildlife/Biodiversity/  Environment | Science | Climate Change | ATS/Protocol legislation | Equity, Diversity  and inclusion |
| Overall | 51.5 | 74.0 | 75.5 | 31.0 | 57.0 | 2.0 |
| 1961-2014 | 21.5 | 37.5 | 29.5 | 11.5 | 23.9 | 0.5 |
| 2015-2022 | 30.0 | 36.5 | 46.0 | 19.5 | 34.0 | 1.5 |
| **Difference** | **+ 8.5** | **-1.0** | **+16.5** | **+8.0** | **+11.0** | **+1.0** |
|  | Target audience | | | | | |
|  | Policy makers | Antarctic personnel | Artists | Journalists | Public | Schools  (incl. Universities) |
| Overall | 23.0 | 17.5 | 18.0 | 10.5 | 80.0 | 68.5 |
| 1961-2014 | 12.0 | 12.5 | 9.5 | 5.0 | 34.5 | 30.5 |
| 2015-2022 | 11.0 | 5.0 | 8.5 | 5.5 | 45.5 | 38.0 |
| **Difference** | **-1.0** | **-7.5** | **-1.0** | **+0.5** | **+11.0** | **7.5** |
|  |  |  |  |  |  |  |
|  | APECS | | | PEI | | |
| Overall | 16.5 | | | 7.5 | | |
| 1961-2014 | 3.0 | | | 1.5 | | |
| 2015-2022 | 13.5 | | | 6.0 | | |
| **Difference** | **+10.5** | | | **+4.5** | | |

We continue to encourage Parties, Observers and Experts to organize, disseminate and collaborate nationally and internationally in education and outreach initiatives related to the Antarctic Treaty, following the Antarctic spirit of cooperation. Future ATCM papers address new relevant topics (e.g., “Equity, Diversity and Inclusion”) with the engagement of the next generations of scientists (via APECS) and educators (via PEI).

*Reference*

Xavier JC, Mateev D, Capper L, Wilmotte A, Walton DWH (2019) Education and Outreach by the Antarctic Treaty Parties, Observers and Experts under the framework of the Antarctic Treaty Consultative meetings. Polar Record 55: 241-244

**Appendix 1.** Parties, Observers and Experts that published ATCM papers on education and outreach between 1961 and 2022.

Consultative Parties: Argentina, Australia, Belgium, Brazil, Bulgaria, Chile, Ecuador, Finland, France, Germany, Italy, Japan, Korea, New Zealand, Norway, Peru, Poland, Russian Federation, South Africa, Spain, Sweden, the United Kingdom, the United States and Uruguay;

Non-Consultative Parties: Belarus, Canada, Colombia, Estonia, Portugal, Romania, Turkey and Venezuela; Observers: SCAR, CCAMLR and COMNAP; Experts - ASOC, IAATO, IUCN, UNEP and WMO.