

AMAP Assessment 2021: **Impacts of Short-lived Climate Forcers on Arctic Climate, Air Quality, and Human Health**

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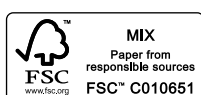
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Preface

This assessment report presents the results of the 2021 AMAP Assessment of the Impacts of Short-lived Climate Forcers on Arctic Climate, Air Quality, and Human Health. The assessment updates information presented in earlier AMAP assessments delivered in 2015.

The Arctic Monitoring and Assessment Programme (AMAP) is a Working Group of the Arctic Council. The Arctic Council Ministers have requested AMAP to:

- produce integrated assessment reports on the status and trends of Arctic ecosystems;
- identify possible causes for the changing conditions in the Arctic;
- detect emerging problems, their possible causes, and the potential risk to Arctic ecosystems including indigenous peoples and other Arctic residents;
- recommend actions required to reduce risks to Arctic ecosystems.

This report provides the accessible scientific basis and validation for any statements and recommendations made in related derivative products, including its summary for policy-makers that was delivered to the Arctic Council Ministers at their meeting in May 2021.

The present report includes extensive background data and references to scientific literature, and details the sources for graphics reproduced in summary products. Whereas the related Summary for Policy-makers contains recommendations that focus on policy-relevant actions, the conclusions and recommendations presented in this report also cover issues of a more scientific nature, such as proposals for filling gaps in knowledge, and recommendations relevant to future monitoring and research work.

This assessment of short-lived climate forcers in the Arctic was conducted between 2017 and 2021 by an international group of experts. The expert group members and lead authors were appointed following an open nomination process coordinated by AMAP. A similar process was used to select international experts who independently reviewed this report. Information contained in this report is fully referenced and based first and foremost on the results of research and monitoring undertaken since 2015. It incorporates some new (unpublished) information from monitoring and research conducted according to well-established and documented national and international standards as well as quality assurance/ quality control protocols. Care was taken to ensure that any critical probability statements made in this assessment were based exclusively on peer-reviewed materials. Access to reliable and up-to-date information is essential for the development of science-based decision-making regarding ongoing changes in the Arctic and their global implications.

The lead authors of this assessment have confirmed that both this report and its derivative products accurately and fully reflect their scientific assessment. All AMAP assessment reports are freely available from the AMAP Secretariat and on the AMAP website (www.amap.no), and their use for educational purposes is encouraged.

AMAP would like to express its appreciation to all experts who have contributed their time, efforts and data, in particular the lead authors who coordinated the production of this report. Thanks are also due to the reviewers who contributed to the assessment peer-review process and provided valuable comments that helped to ensure the quality of the report. A list of contributors is included in the acknowledgments at the start of this report and lead authors are identified at the start of each chapter. The acknowledgments list is not comprehensive. Specifically, it does not include the many national institutes, laboratories and organizations, and their staff that have been involved in contaminants-related monitoring and research. Apologies, and no lesser thanks are given to any individuals unintentionally omitted from the list.

The support from the Arctic and non-Arctic countries implementing research and monitoring in the Arctic is vital to the success of AMAP. AMAP work is heavily based on the ongoing activities of these countries, and the countries that provide the necessary support for the experts involved in the preparation of AMAP assessments. In particular, AMAP would like to acknowledge Finland, Norway and the United States for their lead role in this assessment; AMAP would also like to thank Canada, Norway (Ministry of Foreign Affairs) and the Nordic Council of Ministers for their financial support of this assessment work.

The AMAP Working Group is pleased to present its assessment to the Arctic Council and the international science community.

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Tromsø, December 2021