



Arctic Marine Litter Workshop
Summary Report

*Akureyri - Iceland
5-6 June 2018*

PAME
Protection of the Arctic Marine Environment

Arctic Marine Litter Workshop

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Photo: Wouter Jan Strietman – From a whale watching trip at the eve of the workshop

Acknowledgments:

We gratefully acknowledge the funding support from the Nordic Council of Ministers, the Municipality of Akureyri and Norðurorka for their support in convening this workshop.

About the Workshop

The Arctic Marine Litter Workshop took place from 5-6 June 2018 in the Hof Cultural Center in Akureyri, Iceland. The workshop was co-hosted by the PAME Secretariat, the Ministry for the Environment and Natural Resources in Iceland and the Municipality of Akureyri.

The aim of workshop was to facilitate inputs to the development of the desktop study, taking into account new developments and information as relevant. The workshop agenda was based around the main sections of the desktop study, in addition to several short presentations.

The workshop was Chaired by Magnús Jóhannesson from the Ministry of Foreign Affairs in Iceland and the workshop moderator was Thomas Maes from Cefas.

The workshop agenda, list of participants and presentations can be accessed on the dedicated Marine Litter Workshop website [here](#). Annexes I and II include the workshop agenda and list of participants.

Workshop proceedings

The workshop agenda was based on the outline of the Desktop Study. It started with welcoming words from the Mayor of Akureyri, Eiríkur Björn Björgvinsson, and opening remarks from the Icelandic Minister for the Environment and natural Resources, Guðmundur Ingi Guðbrandsson.

Session II: Main Legislative Frameworks

Demian Schane provided an overview of Section II of the draft desktop study and noted segments in the current draft that still need further work and inputs. Heidi Savelli from UNEP gave an overview of opportunities and options to strengthen and/or coordinate relevant legislative frameworks.



- [Presentation from Demian Schane](#)
- [Presentation from Heidi Savelli](#)

Session III: Marine Litter Literature

Joan Fabres from Grid-Arendal summarized the content of Section III of the desktop study and noted segments in the current draft that still need further work and inputs. Grid-Arendal's presentation was followed by two presentations on the growing threat of marine litter.

- [Presentation from Joan Fabres](#)
- [Presentation from Geir Gabrielsen](#)
- [Presentation from Sarah Da Silva](#)

Session III(a): Sources – Origin of Plastics both within and outside the Arctic

Demian Schane filled in for the Circumpolar Conservation Union and presented their work on marine litter in the Arctic. Dr. Wouter Jan Strietman from Wageningen Economic Research followed with an interactive and lively presentation on the Dutch Arctic Marine Litter Project. Jessica Veldstra from AIA followed with a presentation with a perspective from Arctic Communities.

- [Presentation from CCU](#)
- [Presentation from Wouter-Jan Strietman](#)
- [Presentation from Jessica Veldstra](#)

Session III(b): Impacts of Marine Litter

Maria Granberg presented on microplastic pollution, Peter Murphy on marine debris in Alaska and Nicole Kanayurak on how Inuit's approach addressing marine debris.

- [Presentation from Maria Granberg](#)
- [Presentation from Peter Murphy](#)
- [Presentation from Nicole Kanayurak](#)



The first day concluded with an excursion and a reception sponsored by Norðurorka and organized by the Akureyri Municipality. A group of participants also went whale watching in the evening.

Session III(c): Pathways and Distribution

Day two started with a summary from the previous day, followed by a presentation from Melanie Bergmann from the Alfred Wegener Institute and Hrönn Ólína Jörundsdóttir gave a presentation on microplastic in sewage treatment plants – microplastics.

- [Presentation from Melanie Bergmann](#)
- [Presentation from Hrönn Ólína Jörundsdóttir](#)

Session III(d): Response Activities

Heidi Savelli gave a presentation on responses and highlighted options going forward. Charlotte Mogensen from OSPAR then gave participants insight into the OSPAR Marine Litter Regional Action Plan. Bård Aarbakke focused on fishing gear in his presentation and Sarah Auffret presented on AECO's Clean Seas Project.

- [Presentation from Heidi Savelli](#)
- [Presentation from Charlotte Mogensen](#)
- [Presentation from Bård Aarbakke](#)
- [Presentation from Sarah Auffret](#)



Session IV: Recommendation and Next Steps

Participants provided extensive inputs to the draft desktop study in addition to a range of ideas and suggestions for recommendations on next steps with key issues highlighted below:

- To include the following reference in the desktop study: United Nations Convention on the Law of the Sea (UNCLOS) is the overarching legal framework for human activities that take place in the Arctic marine environment and is the basis for national, regional and global action and cooperation in the marine sector in the Arctic. There is a widely accepted and predictable legal framework for international cooperation and collaboration in a region that has long been characterized by peace and stability. The Desktop Study is based on widely recognized principles and approaches such as sustainable development, the precautionary approach, the polluter pays principle, and the application of Ecosystem Based Management.
- Chapter II- Main international/regional frameworks: Following issues were highlighted, for possible inclusion in the updated version of the desktop study.



- ✓ Collaboration with international frameworks, including Regional Action Plans developed by Regional Sea Conventions (OSPAR & HELCOM) and G7 and G20 initiatives (<https://www.mofa.go.jp/mofaj/files/000272290.pdf>)
- ✓ United Nations Environment Assembly's (UNEA) contribution towards the 2030 Agenda
- Summary of existing Regional Action Plans on marine litter and their applicability to the Arctic.
- Summary of national legislative actions related to actions to combat sea-based sources, actions to combat land-based sources, removal actions, monitoring/science, and communication and outreach and science pillars (5 pillars).
- Reference to the IMO Polar Code, which came into force in January 2017:
 - Under Part II A, Chapter 5 there is a total prohibition on the discharge of garbage other than food waste. Procedures must be recorded in the Garbage Record Book, Garbage Management Plan and the placards as required by MARPOL Annex V and additional guidance.
 - Additionally, to aid its implementation, PAME's Arctic Shipping Best Practice Information Forum (the Forum) have established a dedicated Web Portal where information posted by the Participants of PAME's Forum about the approach to implementation of the Polar Code including PART II A, Chapter 5 can be found at: www.arcticshippingforum.is
- Existing international and national sewage treatment obligations, regulations and requirements.

Chapter III-Literature Review: Following issues were highlighted, for possible inclusion in the updated version of the desktop study.

- Identify main inputs and pressures within the Arctic, including point source and diffuse sources, and riverine input of marine litter.
- Describe the present footprint of marine litter in the Arctic using proxy data (industry, collection, waste, recycling rates, number of facilities, number of activities), including a distribution map.
- Describe monitoring of the sea floor for evidence of marine litter.
- Describe what is known concerning the fate of the plastics in the Arctic, including breakdown rates, physical processes, quantities, impacts on sensitive species.
- Review case studies on the socio-economic impact of marine litter on fisheries, tourism, biodiversity, and human health.

It was recommended that knowledge gaps identified in Chapters II and III should be summarized in Chapter IV as possible next steps (e.g. potential near-term and/or long-term actions).

Chapter IV-Recommendations on Next Steps: Following issues were highlighted as proposed recommendations on next steps for PAME's consideration:

Develop a regional action plan on marine litter in the Arctic, taking into account existing regional action plans, and be structured around the following themes:

- Actions to combat sea-based sources of marine litter

- Actions to combat land-based sources of Marine Litter
- Removal Actions
- Monitoring/Science
- Education and Outreach

It was recommended that in developing the outline of a Regional Action Plan to take into account the following issues:

- A Regional approach amplifies national actions by coordinating efforts.
- Jointly addressing international commitments (e.g. UN, IMO, EU, etc.), including the Polar Code, antifouling paints on ships and possible impacts on the Arctic Region, including on sea ice.
- Including recommendations from FAO on gear marking to identify lost and abandon fishing gear.
- Developing best practices for delivering fishing, including evaluation of nets, recycling of nets. (e.g. list of suppliers), the use and disposal of plastics, disposal of fisheries and aquaculture waste, shipping waste and land-based waste.

Develop a monitoring program parallel to the development of a regional action plan on marine litter in the Arctic and considering the following issues:

- Establish an advisory group on monitoring with the Arctic Council working groups working on this topic and seek guidance, as relevant, from Regional Sea Conventions (e.g. OSPAR that is an Arctic Council Observer), that already have monitoring programs in place. Such an advisory group should develop a Terms of Reference for their work and could consider the following:
 - Such a monitoring program should reflect microplastics impacts on ecosystem health.
 - It is important to standardize monitoring methods to improve comparability and determine trends.
 - Consider the development of new parameters for monitoring of plastic in the sea, sea ice and sediments.
 - Developing parameters for collection of data (e.g. OSPAR)
 - Coordinate monitoring of marine litter with other programs to assess effectiveness of mitigation measures.
- Other monitoring and information gathering included issues such as:
 - Planning for the collection of operational data linked to production.
 - Developing a Threat map for sensitive species.
 - Making recommendations to the Arctic Riverine (Arctic Great Rivers Observatory) project on marine litter from rivers.

Other recommendations on next steps that could be considered either as a standalone activity or as a part of the development of a regional action plan on marine litter in the Arctic

- Developing waste management best practices for port reception facilities.
- Developing best practices for waste management and management of sludge.

- Considering end of the line solution regarding sludge.
- Assessing sewage treatment systems in the Arctic.
- Assessing atmospheric inputs to the Arctic.
- Assessing sea-ice input and oceanic input.
- Describing impact types, debris type, geography (Arctic sub-region, LME's or country)
- Building an economic incentivized model for evaluating impacts.
- Consider establishing of a best practice forum to discuss the impact of marine litter for the industry to gain an overview of production, retail and tourism industries for the Arctic Region.
- Develop case studies: Degradation of plastics in the Arctic, How the cold influences the break-down of plastic (e.g. is it more brittle?), evidence of microplastics accumulating in humans, socio-economic studies of the impact of marine litter, fishing and Litter.
- Develop a risk assessment for food security and food safety.
- Assess micro vs. nano ecotoxicology.

Concluding Remarks

The project's co-leads thanked everyone for a fruitful discussions and excellent inputs from participants and highlighted the next steps as follows:

- End of June/beginning of July 2018: Marine litter co-leads to send out a revised version of the desktop study including the initial draft recommendations to PAME for comments by 15th of August 2018
- End of August 2018 (or 30 days prior to PAME II-2018): Marine litter co-leads to revise the desktop study and submit in advance of the PAME II-2018 meeting to include revised draft recommendations on next steps as a part of the PAMEs future work plan developments.
- December 2018: Final draft desktop study distributed in advance of the PAME I-2019.
- February 2019: Approval at PAME I-2019
- March 2019: Approval by SAOs
- May 2019: Approval by Ministers

ARCTIC MARINE LITTER WORKSHOP

5-6 June 2018 - Hof Cultural Center - Akureyri – Iceland

AGENDA

Aim of workshop: To facilitate inputs to the development of the desktop study, taking into account new developments and information as relevant. The workshop agenda is based around the main sections of the desktop study, in addition to several short presentations.

Workshop Chair: Magnús Jóhannesson

Moderator: Thomas Maes

Expected outcome: Recommendations for next steps (that can feed into the development of the desktop study) and a summary workshop report.



Akureyrarbær

PAME
Protection of the Arctic Marine Environment



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Ministry for the Environment
and Natural Resources

TUESDAY 5 JUNE

Registration
08:30 - 09:00

SESSION I: OPENING OF THE WORKSHOP 09:00 - 09:30

- Opening remarks
 - Eiríkur Björn Björgvinsson, *Mayor of Akureyri*
 - Guðmundur Ingi Guðbrandsson, *Minister for the Environment and Natural Resources*
- Overview of desktop study outline and timeline (co-leads)
- Introduction of participants (tour de table)

SESSION II: MAIN LEGISLATIVE FRAMEWORKS 09:30 - 10:30

09:30 - 09:45 **Demian A. Schane** - Deputy Chief, Alaska Section, NOAA, Office of General Counsel: *Status and emerging trends of the legislative framework*

Opportunities and options to strengthen and/or coordinate relevant legislative frameworks with particular relevance to the Arctic

09:45 - 10:00 **Heidi Savelli-Soderberg** - Programme Officer for the Communication Education Training, UNEP Regional Office for North America

10:00 - 10:30 **Discussions and inputs from participants** - including potential recommendations (to feed into Session IV)

Coffee Break
10:30 - 11:00

SESSION III: MARINE LITTER LITERATURE 11:00 - 17.00

11:00 - 11:15 **Joan Fabres** - Grid-Arendal
Status and emerging trends as per the literature categories.

The growing threat of marine litter

- 11:15 - 11:30 • **Geir Wing Gabrielsen** - Norwegian Polar Institute
- 11:30 - 11:45 • **Sarah Da Silva** - Senior Program Officer for Environment and Climate Change Canada.

11:45 - 12:30 **Discussions and inputs from participants** - including potential recommendations (to feed into Session IV).

Lunch
12:30 - 13:30

Session III (a): Sources: Origin of plastic both within and outside the Arctic

13:30 - 15:00

Facilitator: Thomas Maes, Cefas

- 13:30 - 13:45 • **Demian Schane** - On behalf of the Circumpolar Conservation Union
- 13:45 - 14:05 • **Dr. Wouter Jan Strietman** - Arctic Marine Litter Project, Wageningen Economic Research, The Hague
- 14:05 - 14:25 • **Jessica Veldstra** - Aleut International Association
- 14:25 - 15:00 **Discussions and inputs from participants** - including potential recommendations (to feed into Session IV).

Coffee Break
15:00 - 15:30

Session III (b): Impacts of Marine Litter

15:30 - 16:45

Facilitator: Thomas Maes, Cefas

- 15:30 - 15:45 • **Dr. Maria Granberg** - Microplastics in Arctic coastal marine systems– understanding the roles of local and remote pollution sources, IVL Swedish Environmental Research Institute
- 15:45 - 16:00 • **Peter Murphy** - Regional Coordinator – Alaska, NOAA Marine Debris Program / Genwest, Office of Response and Restoration
- 16:00 - 16:15 • **Nicole Kanayurak** - Inuit Circumpolar Council, Impact to Inuit Communities
- 16:15 - 16:45 **Discussions and inputs from participants** - including potential recommendations (to feed into Session IV).

MEETING ADJOURNED

16:45

EXCURSION AND RECEPTION

Hosted by Akureyrarbær Municipality

17:00 - 20:00

Sponsored by:



WEDNESDAY 6 JUNE

Summary from day 1

09:00 - 09:15

Session III (c): Pathways and distribution

09:15 - 10:30

Facilitator: Thomas Maes, Cefas

- 09:15 - 09:30 • **Dr. Melanie Bergmann** - Senior Scientist, Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research
- 09:30 - 09:45 • **Hrönn Ólína Jörundsdóttir** - Chief Infrastructure Officer (CIO), MATÍS and Icelandic Food and Biotech R&D Institute
- 09:45 - 10:30 **Discussions and inputs from participants** - including potential recommendations (to feed into Session IV).

Coffee Break

10:30 - 11:00

Session III (d): Response Activities

11:00 - 12:30

Facilitator: Thomas Maes, Cefas

- 11:00 - 11:15 • **Heidi Savelli-Soderberg** - Programme Officer for the Communication Education Training, UNEP Regional Office for North America (Global platform on Marine Litter)
- 11:15 - 11:30 • **Charlotte Mogensen** - OSPAR Deputy Secretary, OSPAR Marine Litter regional action plan
- 11:30 - 11:45 • **Bård Aarbakke** - Network manager, Clean Nordic Oceans (CNO)
- 11:45 - 12:00 • **Sarah Auffret** - Association of Arctic Expedition Cruise Operators
- 12:00 - 12:30 **Discussions and inputs from participants** - including potential recommendations (to feed into Session IV).

Lunch

12:30 - 13:30

SESSION IV: RECOMMENDATIONS AND NEXT STEPS

13:30 - 15:00

- Summary of discussions based on inputs from participants Thomas Maes, Cefas)
- Additional inputs by participants
- Summary by the chair and next steps (project co-leads)

MEETING ADJOURNED

15:00

Annex II: List of Participants

	First name	Last name	Institution	Country	E-mail
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