

THE ARCTIC – A SINK FOR GLOBAL POLLUTION

The Arctic is one of the most sparsely populated regions on Earth, and yet, it appears to be a sink for global pollution. While there are some local sources of the pollution, most of it comes from regions far away. Ocean currents, rivers and winds carry litter and environmental contaminants long distances northward, where it ends up impacting one of the most vulnerable ecosystems in the world. Measures are being taken to address the problem, but we need to know more – and we need to do more – to counter the damages.



Photo by shawnggg on Unsplash

THE SOURCES

Arctic pollution includes micro- and macroplastics, toxic metals such as mercury, lead and cadmium, other chemicals such as persistent organic pollutants, and even radionuclides - all of which have been detected in animals and humans living in the Arctic. The pollutants originate from four main sources: municipal emissions, agriculture, industry, and maritime activities.

They are transported into the Arctic through ocean currents, rivers and winds. In essence, the Arctic not only has to manage its own pollution, but bears the burden of pollution transported from outside the region.

Plastics

Microplastic particles are omnipresent in the region. They are found in the ocean water, in glaciers and snow, and in the stomachs and intestines of seabirds, fish and other animals. Particles have even been detected in zooplankton, impacting the whole food chain in the Arctic.

Macro plastics are also heavily impacting the region. Some of the litter piling up on Arctic beaches consists of household waste and packaging, but most is related to fishing activities.¹ Lost fishing gear harms or strangles fish, seals, birds and other wildlife in the region. Lost or discarded fishing gear also causes ghost fishing, leading to poor animal welfare and wasted resources.

Mercury

Mercury is a chemical that can cause serious health problems. Less than two percent of the mercury emissions

found in the Arctic have a local origin. Most of it is deposited in the environment after a long-range transportation process.² Once in the Arctic, it moves through the tundra and permafrost, and inorganic mercury is transformed into the even more toxic methylmercury. When glaciers melt and the permafrost thaws, it is released into the air and water.

Due to international agreements and regulations, atmospheric levels of mercury are decreasing. However, the people and wildlife living in the Arctic remain more critically exposed to mercury than many other parts of the world.

Other chemicals

Persistent organic pollutants (POPs) are another concerning type of chemical pollutant. POPs are toxic and environmentally persistent chemicals that bioaccumulate in the food chain. Like mercury, they end up in the Arctic mainly due to long-range transport of pesticides and industrial chemicals from lower latitudes.³

Globally, emissions of well-known POPs are decreasing due to international regulations. In the Arctic, however, climate change leads to an upward trend of POPs. With thawing permafrost and melting snow and ice, they are increasingly being released into water, sediments, and the atmosphere.

Researchers are also raising flags over what has been labelled Chemicals of Emerging Arctic Concern (CEACs). These are currently not regulated by international conventions, but their risk to animals in the Arctic is increasingly observed.⁴

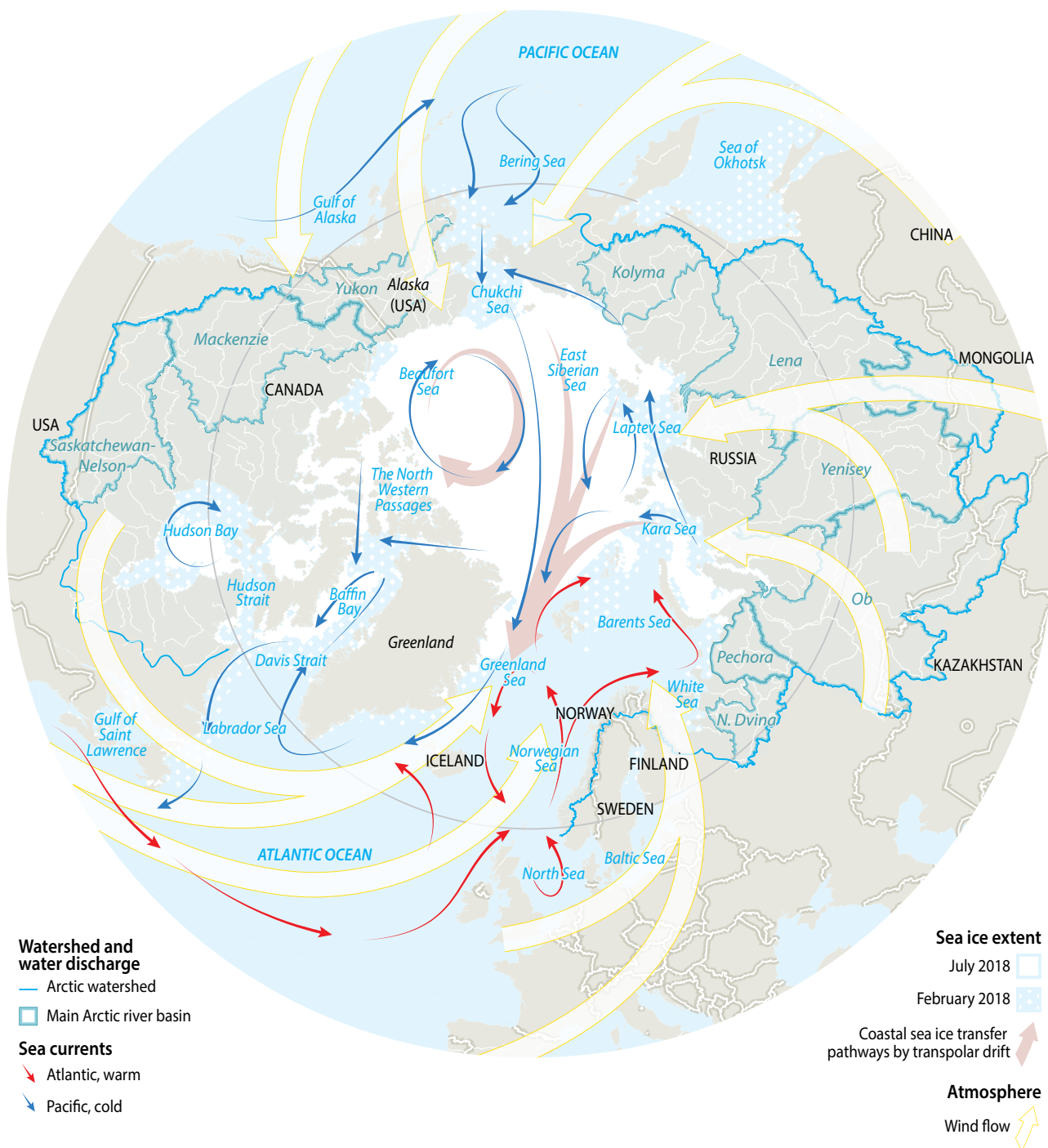


Photo by Peter Prokosh



Photo by Peter Prokosh

POLLUTION PATHWAYS TO THE ARCTIC



Adapted from PAME, Regional Action Plan on Marine Litter in the Arctic (May 2021).

Sources: AMAP Assessment 2002; Holmes, R., M., et al., Climate Change Impacts on the Hydrology and Biogeochemistry of Arctic Rivers; Dery et al., Recent trends and variability in river discharge across northern Canada, 2016; HydroShed; WRI.

GRID-ARENDA / GEO-GRAPHICS 2018



TAKE HOME MESSAGE

The Arctic is no longer a pristine and remote area – it is a sink for global pollution. Litter and other environmental contaminants from across the globe find their way to the Arctic, causing serious harm to humans, wildlife, and ecosystems in the region. This is not just a local issue. Arctic pollution impacts ecosystems on a larger scale, affecting marine economies around the world.

With climate change, the Arctic is becoming even more accessible. The risk of pollution increases with more human activity, whether it is shipping, tourism, fishing, or mining. This poses new challenges for environmental governance, both locally and internationally.

International cooperation is needed to tackle the challenge. Much has been done already, for example with the Minamata Convention on mercury and the Stockholm Convention on persistent organic pollutants, but we still have a long way to go. Several initiatives are in progress, including the work towards a new global treaty on plastic pollution and an agreement for strengthening the sound management of chemicals and waste (SMCW). These initiatives should be followed up closely, to ensure improved environmental governance and safer, resilient and just societies – both in the Arctic, and internationally.

References

1. Haarr, Falk-Andersson. Havplast – delrapport marin plastforsøpling fra fiskeflåten; SALT; 2019. Report No.: 1039.
2. AMAP – Arctic Monitoring and Assessment Program. 2021 AMAP Mercury Assessment. Summary for policy-makers; 2021.
3. AMAP – Arctic Monitoring and Assessment Program. Human health in the Arctic 2021. Summary for policy-makers; 2021.
4. AMAP – Arctic Monitoring and Assessment Program. POPs and chemicals of emerging Arctic concern: Influence of climate change. Summary for policy-makers; 2021.

www.grida.no
www.havarktis.no

© 2021