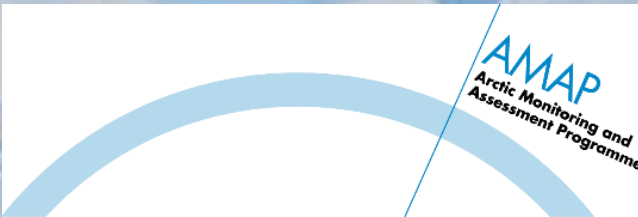


Stockholm Convention COP-9 May 2nd, 2019, Geneva, Switzerland



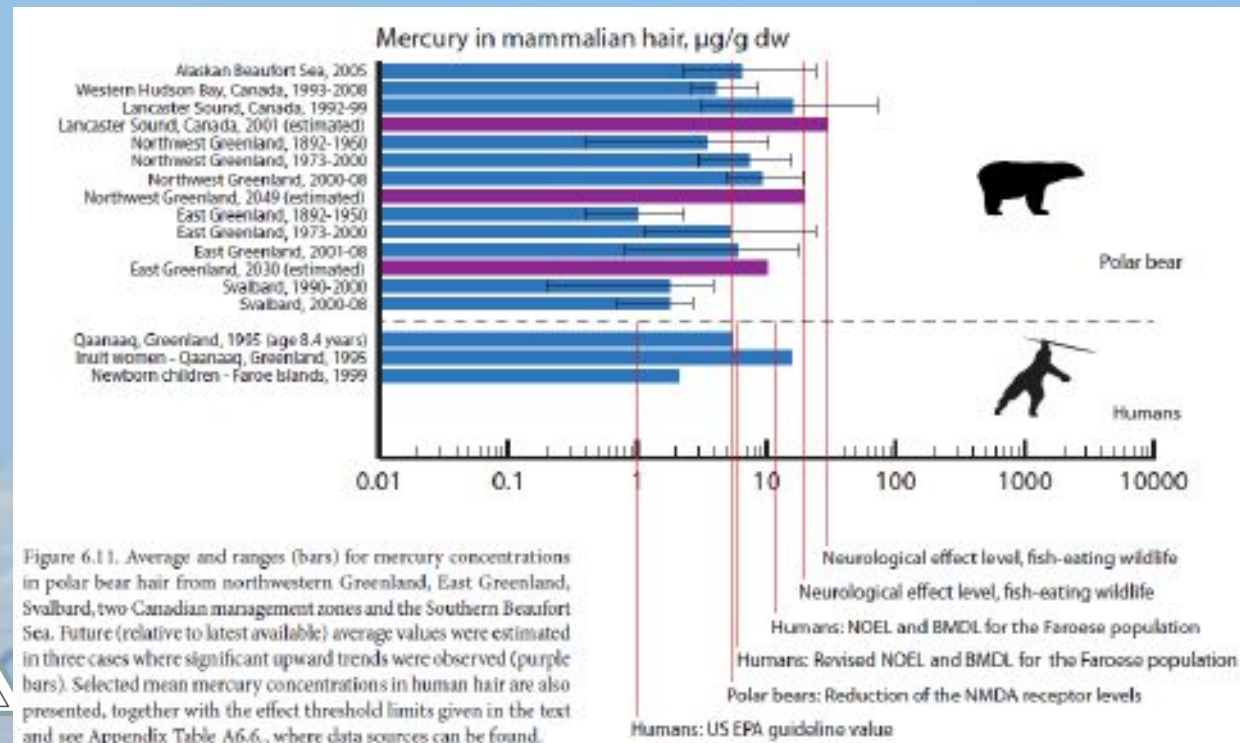
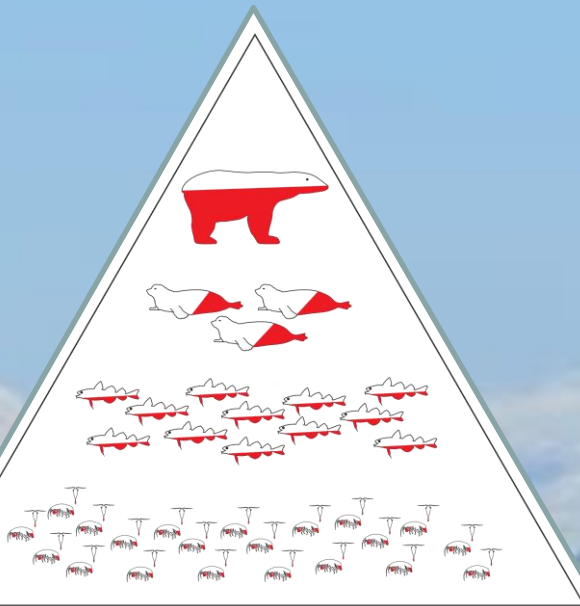
The Arctic Monitoring Assessment Programme (AMAP), Arctic Indigenous Peoples, and global action on contaminants

Eva M. Krümmel – Inuit Circumpolar Council (ICC)



Contaminants in the Arctic

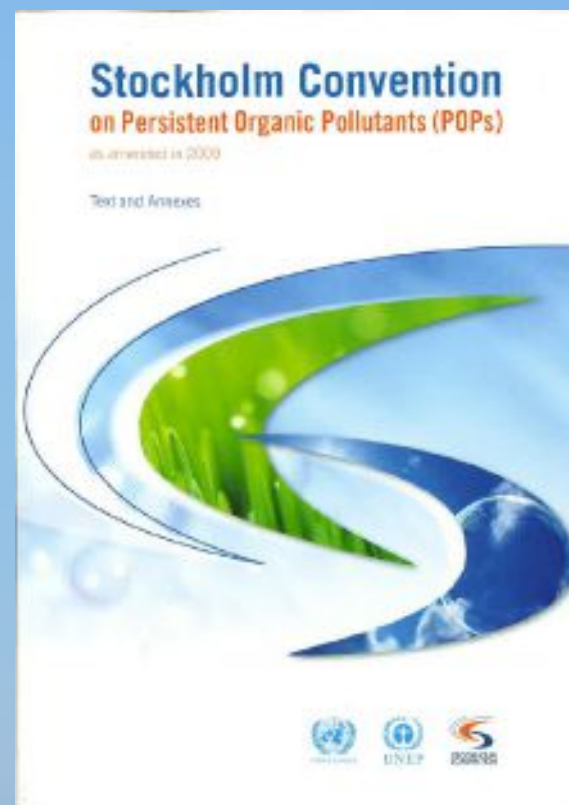
- Long-range transport (few sources within the region)
- Biomagnification in (marine) food webs
- Subsistence consumption of marine foods (marine mammals)
- Very high levels of contaminants in some Arctic human populations (exceeding guidelines)
- Concern for ecosystem and human health effects



Importance of the Arctic

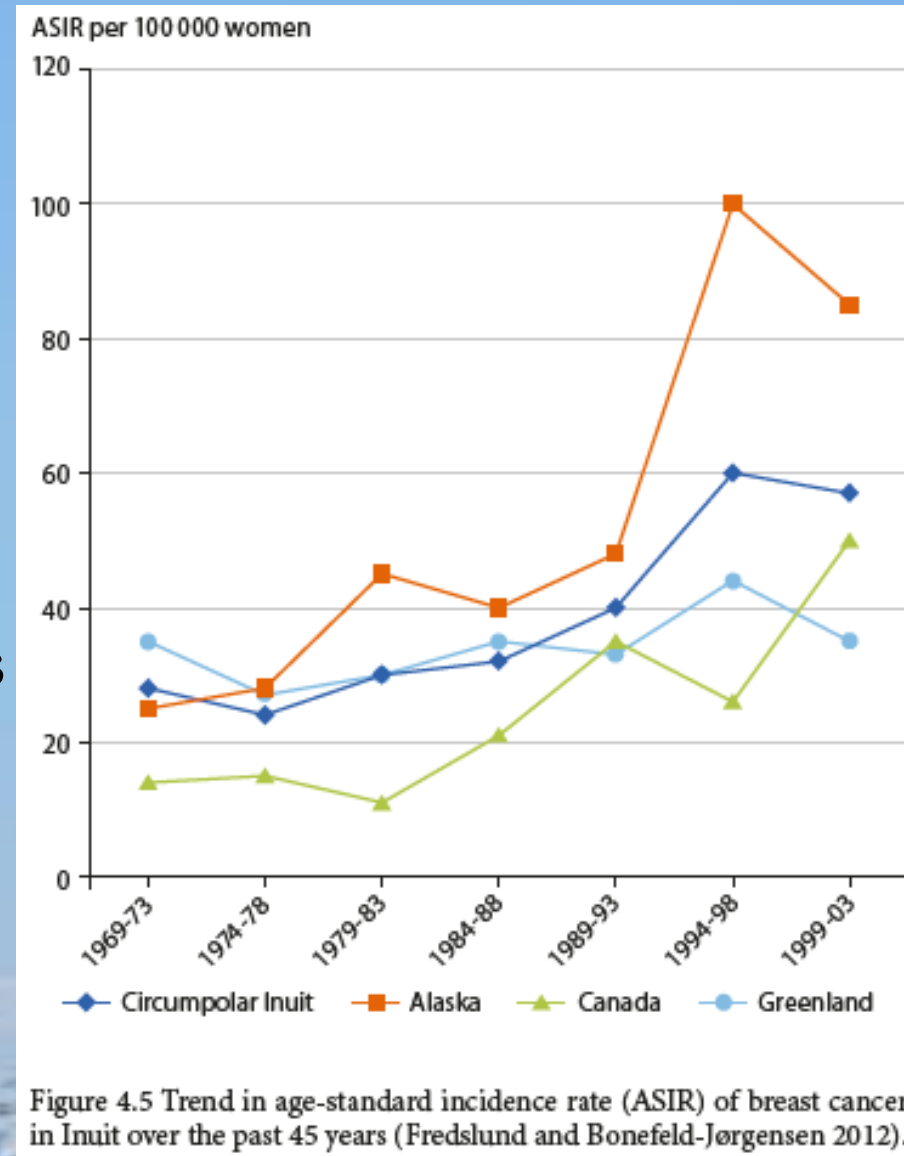
Preamble of the Stockholm Convention

*“Acknowledging that the **Arctic ecosystems and indigenous communities are particularly at risk** because of the biomagnification of persistent organic pollutants and that contamination of their traditional foods is a public health issue.”*



Breast cancer rates in Inuit women

- Since 1960, cancer incidence increased substantially among all circumpolar Inuit, especially for lifestyle-associated cancers (lung, breast, colon).
- Cancer rates are now comparable to national rates in US, Canada and Denmark.
- The recent change in lifestyle and diet and thus environmental contaminant exposure of the Inuit might play a role.



Importance of country foods

Cultural Benefits



Nutritional Benefits



Economic Benefits

Social Benefits

RUSSIA

INUIT NUNAAT INUIT HOMELAND



Offices

KALAALLIT NUNAAT
GREENLAND

CANADA



Inuit Copyright Council 2013.
Produced by Susan Turkel. Reprinted from the
Canadian Information Map Project, produced by the
Department of Canadian Heritage, 2008.
Scale 1:500,000
Map of the Arctic Region
Attribution: Department of Canadian Heritage

Arctic Council



Aleut International Association, Arctic Athabaskan Council, Gwitch'in Council International, Inuit Circumpolar Council, Saami Council, Russian Association of Indigenous Peoples of the North

ARCTIC COUNTRIES
Permanent Participants (indigenous peoples organizations)
Observers (countries and organizations)

Canada, Kingdom of Denmark, Finland, Iceland, Norway, Russia, Sweden, USA

**13 Non-Arctic States
13 IGOs (including UNEP)
13 NGOs**

ARCTIC COUNCIL

ACAP
Arctic
Contaminants
Action Program

AMAP
Arctic Monitoring
and Assessment
Programme

CAFF
Conservation
of Arctic Flora
and Fauna

EPPR
Emergency, Prevention,
Preparedness
and Response

PAME
Protection of
the Arctic Marine
Environment

SDWG
Sustainable
Development
Working Group

Arctic Council's Arctic Monitoring and Assessment Programme



Priorities: POPs, Metals, Human Health; Climate, Ocean Acidification, Oil, Radioactivity

Media: Atmospheric, Terrestrial, Marine, Freshwater, Humans

Documenting: Sources, Pathways, Levels, Bio-accumulation, Trends & Effects, New Chemicals

- Coordinated monitoring, method development
- Data collected at thematic data centres
- QA/QC: AMAP inter-laboratory studies
- Assessments available at www.amap.no



AMAP mandate

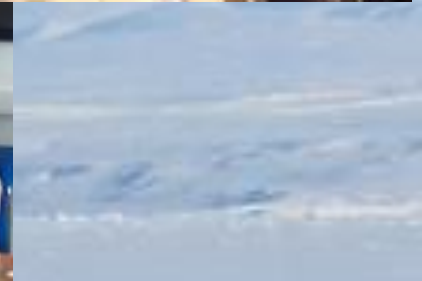
Provide information for:

- **Integrated assessment reports on status and trends in the condition of Arctic ecosystem.**
- **Identifying possible causes for changing conditions.**
- **Detecting emerging problems, their possible causes, and the potential risk to Arctic ecosystems including Indigenous Peoples and other Arctic residents.**
- **Recommending actions required to reduce risks to Arctic ecosystem.**



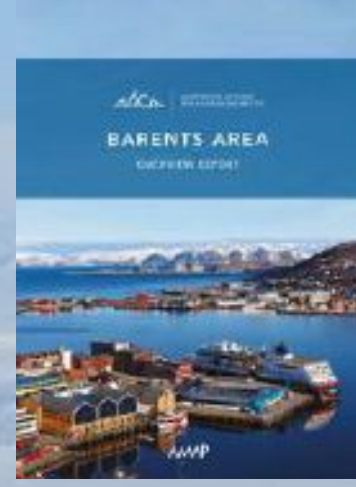
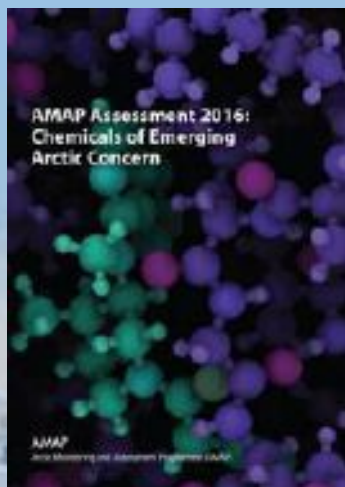
AMAP Expert Groups

- National/Indigenous experts providing information for, and writing of assessments/reports
- Experts are funded by their relevant institutions or countries
- Expert groups on: **POPs**, Mercury, **Human Health**, Radioactivity, Climate Change



Products

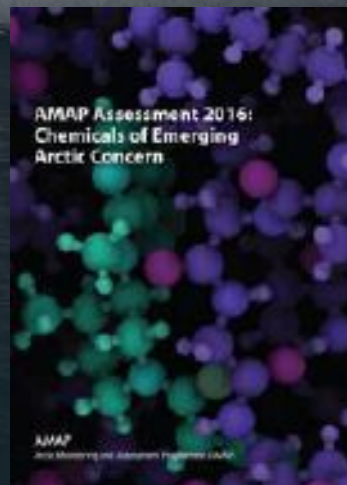
- Scientific assessments with **peer review**
- Advising Arctic Council and Senior Arctic Officials
 - Summaries for **policy makers**
- Advice/data to support international organizations - IPCC, UN Environment (**Stockholm Convention**, Minamata Convention, and others)
- Assessments supported by **funding** from Canada, Denmark, Norway, the Nordic Council of Ministers with **in-kind financial support** from all the Arctic countries and a number of observers



Addressing pollution issues

Recently completed:

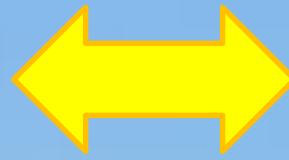
- Biological Effects of Contaminants on Arctic Wildlife and Fish (2018)
- Chemicals of Emerging Arctic Concern (2016)



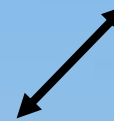
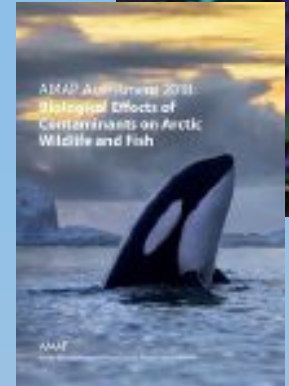
Work ahead

- Short-lived climate forcers (2021)
- **POPs and Climate Change Effects (2021?)**
- Mercury in the Arctic (2021)
- Marine litter monitoring guidelines (2021)
- **Human health in the Arctic (2021-2023)**
- Radioactivity in the Arctic (2021-2023)

**Canadian
Government:
Northern
Contaminants
Program (NCP)**



**Arctic Council:
Arctic Monitoring and
Assessment Programme
(AMAP)**



International Agreements (e.g. UNEP):
- Stockholm Convention on POPs
(including POPRC)
- Minamata Convention on Mercury



Decreasing contaminant levels

The Return of Legacy POPs?

Brief Communication

Bioaccumulation of persistent organic pollutants in the deepest ocean fauna

Alan J. Jamieson, Tamas Malkocs, Stuart B. Pierney, Toyonobu Fujii & Zulin Zhang

PERSISTENT CHEMICALS

Predicting global killer whale population collapse from PCB pollution

Desforges *et al.*, *Science* **361**, 1373–1376 (2018)

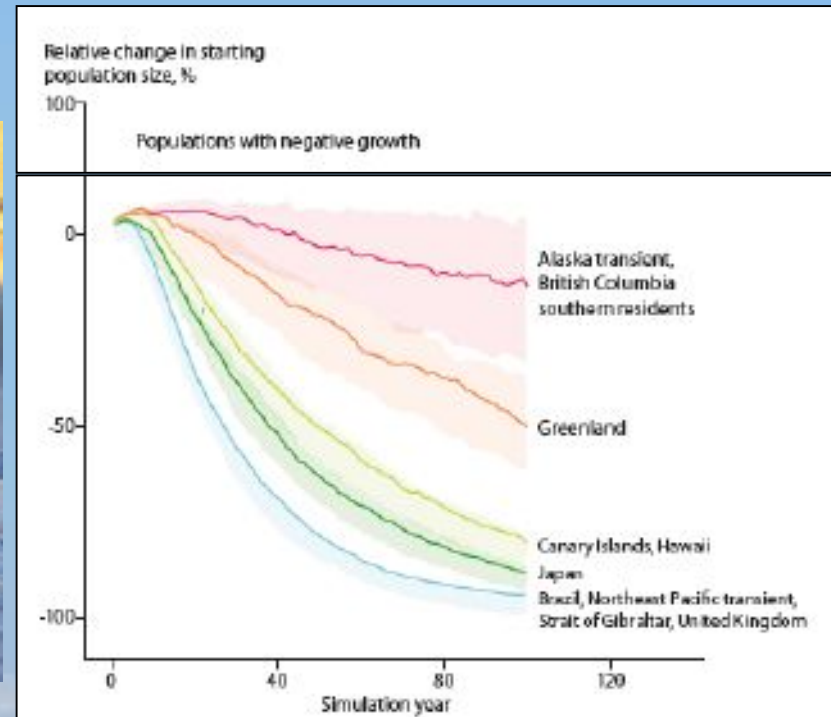
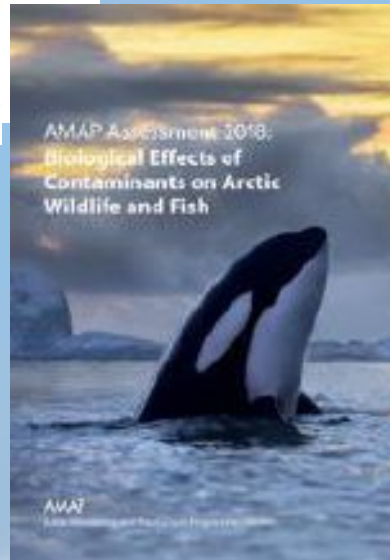


Figure 4.2 Combined reproductive and immune effects of PCBs on population size of killer whales simulated for a 100-year period. Bold line and shading represent the median and interquartile range represented as a percentage of starting population size. Panels are divided by populations with positive growth and negative growth. Modified from Desforges *et al.*, 2018.

- AMAP summary for policy makers to be released next week
- Will contain recommendations on PCBs

Compounds of Emerging Concern

- New chemicals, compounds and products reaching the Arctic that do not fulfill Stockholm Convention criteria, and/or are not addressed by current legislation.
- An example is plastics/microplastics
- Proactive, precautionary approach is needed

1/29/2016 Plastic now pollutes every corner of Earth | Environment | The Guardian
theguardian
Plastic now pollutes every corner of Earth

Beached Whale Found With 30 Plastic Bags Crammed In Its Belly

"It wasn't like it was in just part of the stomach. It filled up the whole space."

Observational Study Unveils the Extensive Presence of Hazardous Elements in Beached Plastics from Lake Geneva

Montserrat Filella ^{1*} and Andrew Turner ²

NATURE | NEWS

Plastic waste taints the ocean floors

ROYAL SOCIETY
OPEN SCIENCE

The deep sea is a major sink for microplastic debris



Future perspectives



- Combining knowledge to understand the future: co-production of knowledge
- Multiple stressors
- Data products for effectiveness evaluation of the Stockholm and Minamata conventions

Qujannamiik - Nakurmiik - Ma'na - Quanaqquitit
Thank you - Merci – Danke



www.amap.no

www.inuitcircumpolar.com