WP 8 – Cleaner Arctic, cleaner world: documenting and reducing pollution

Simon Wilson
Arctic Monitoring and Assessment Programme (AMAP) Secretariat

Progress – Task 8.0 – Continuing Activity

Task 8.0 WP management

Activity: Administrative tasks.

Status: General administrative/financial requests from project coordinators

D8.1 Delivered (July 2021)
Periodic Financial/Narrative Report Delivered (Sept 2021)

D8.2 Due Jan 2022 – request to delay
Timing of next Financial/Narrative Report?

Progress – Task 8.1 – COMPLETED

Task 8.1 Identifying emerging pollutants …
where INTERACT can play a role, and policies suggested to reduce/minimize use/impacts

Task: Review existing information on chemicals of emerging Arctic concern to identify those most relevant with respect to possible use/presence at or around selected INTERACT research stations, for possible investigation of occurrence and/or actions to reduce possible local contamination.

Activities:
INTERACT webinar: 10 March 2021 in cooperation with WP2
WP8 Survey questionnaire circulated (Feb 2021); responses (June 2021) summarised.

- **D8.1** Catalogue listing local and transboundary emerging pollutants selected for possible (targeted) screening at INTERACT Stations (Month 18 / June 2021)

Status:
Delivered 16 July (following agreed 1-month extension)

AMAP Arctic Monitoring and Assessment Programme

INTERACT

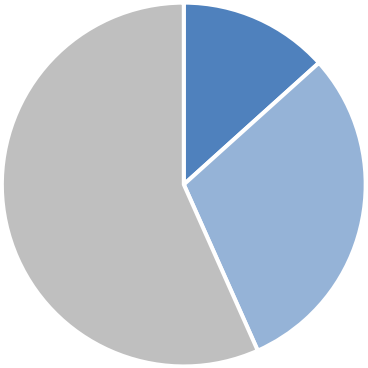
INTERACT III – Survey of Pollution Screening Activities in the INTERACT station network – Summary of Results

Survey Response:

30 responses by 15 June extended deadline

13 reported monitoring contaminants at the station

4 reported involvement in contaminants screening programmes*



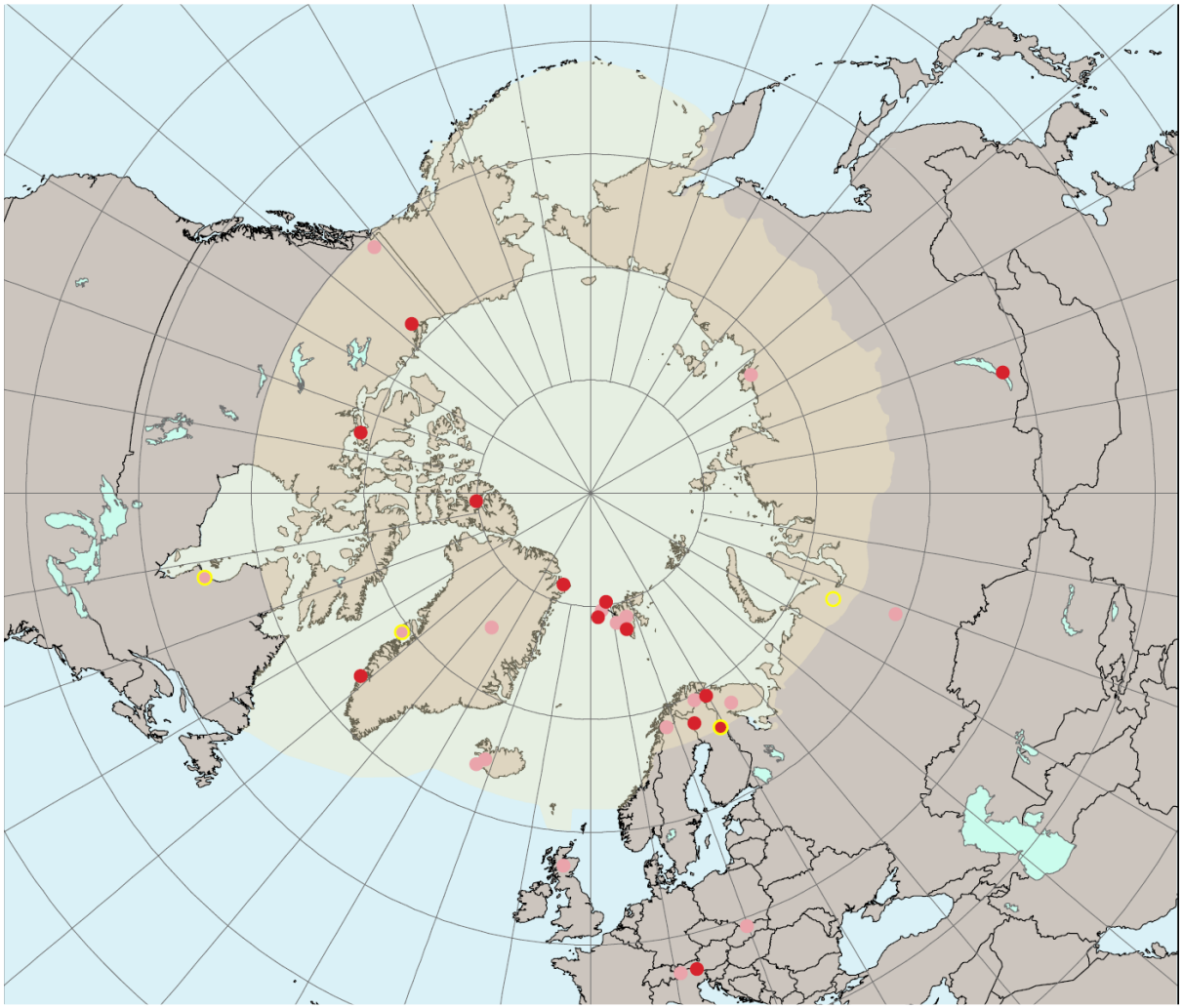
Sonnblick Observatory
Netherlands Arctic Station (Ny-Ålesund)
Greenland Institute of Natural Resources*
Station Hintereis
ECN Cairngorms
Abisko Scientific Research Station
M&M Kłapa Station
Dirigibile Italia - CNR (Ny-Ålesund)
Sudurnes Science and Learning Center
Oulanka research station
Arctic Station
Whapmagootsui-Kuujjuarapik Research Complex (CEN) *
Litla Skard
Villum Research Station*
Pallas-Sodankylä
Khibiny research station LMSU
Polar Environment Atmospheric Research Laboratory (PEARL)
Nicolaus Copernicus University Station
Mukhrino FS

Adam Mickiewicz University Polar Station 'Petuniabukta'
Kevo Subarctic Research Station
Hornsund Polish Polar Station
Istomino
Canadian High Arctic Research Station
EGRIP
Western Arctic Research Centre
Kluane Lake Research Station
NIBIO Svanhovd
Ny-Ålesund Research Station – Sverdrup*
Samoylov

AMAP Arctic Monitoring and Assessment Programme

INTERACT

INTERACT III – Survey of Pollution Screening Activities in the INTERACT station network – Summary of Results



AMAP Arctic Monitoring and Assessment Programme

INTERACT

INTERACT III – Survey of Pollution Screening Activities in the INTERACT station network – Summary of Results

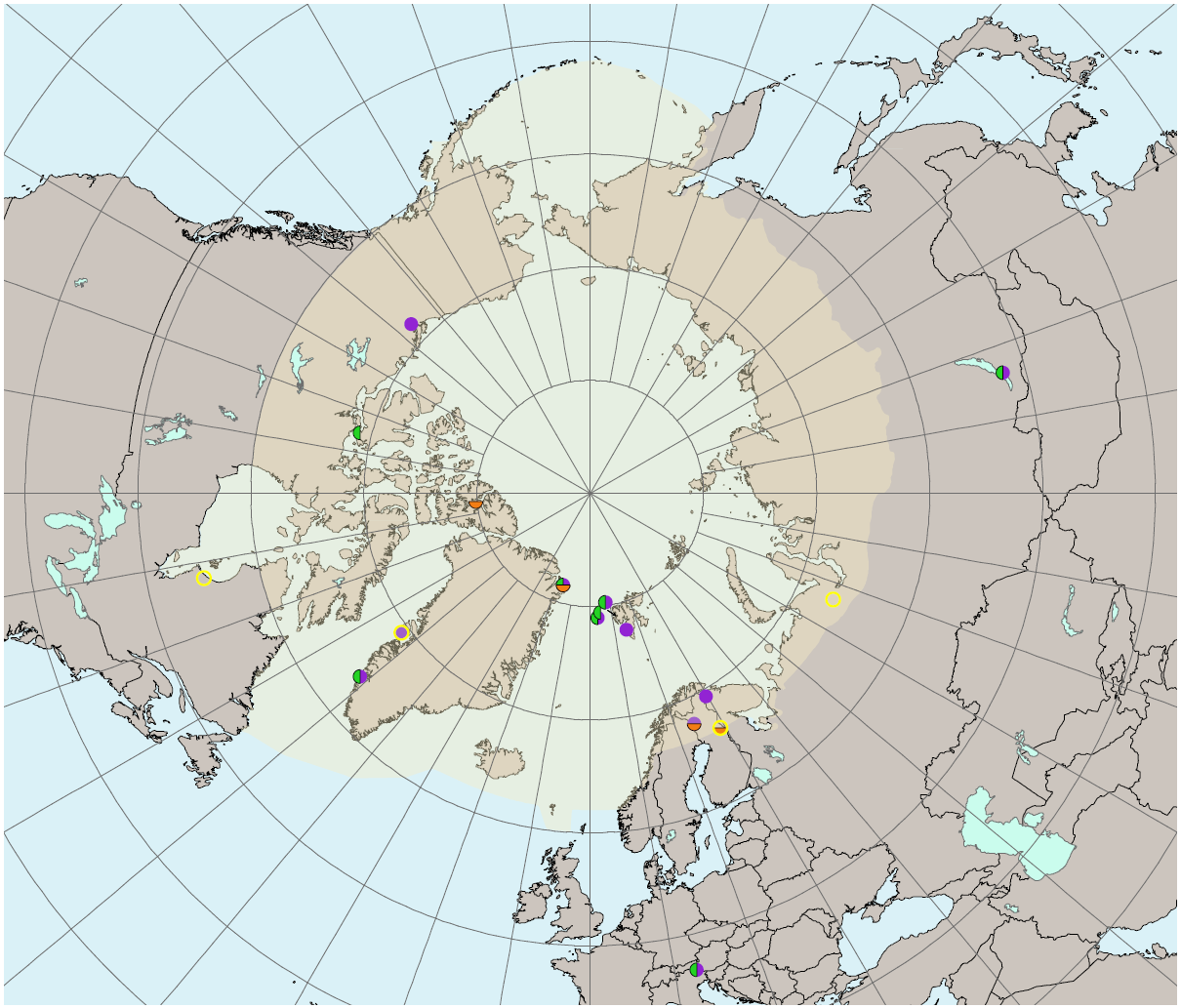
Contaminant monitoring = yes	Air-Prec. /Snow-ice	Water	Mar. biota	Terr. biota	
Sonnblick Observatory	√			√	
Greenland Institute of Natural Resources		√	√	√	
Dirigibile Italia - CNR (Ny-Ålesund)	√	√	√		
Oulanka research station	√	√			
Villum Research Station	√				
Pallas-Sodankylä	√				
Polar Environment Atmospheric Research Laboratory (PEARL)	√				
Hornsund Polish Polar Station	√				
ISTOMINO	√				
Canadian High Arctic Research Station	√				
Western Arctic Research Centre	√				
NIBIO Svanhovd		√	√	√	
Ny-Ålesund Research Station Sverdrup	√				
Whapmagoostui-Kuujjuarapik station (CEN)					
Arctic Station, Greenland					
The Arctic Research Station, Russian Federation					

AMAP Arctic Monitoring and Assessment Programme

INTERACT

INTERACT III – Survey of Pollution Screening Activities in the INTERACT station network – Contaminants Monitoring

Purple: POPs/CEACs/HM
Orange: air quality
Green- plastics



AMAP Arctic Monitoring and Assessment Programme

INTERACT

INTERACT III – Survey of Pollution Screening Activities in the INTERACT station network – Summary of Results

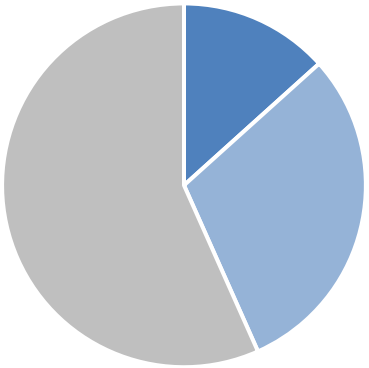
Survey Response

Correct reflection?

– Station Managers knowledge?

– Monitoring not linked to stations (local hunters sample collection)

How to use survey information in development of INTERACT III



Surveying contaminants work at INTERACT stations

Interact database: 39 sites reported that Environmental studies are carried out at their stations; ca. 17 reported monitoring pollutants (in plants/animals)

Although not doing contaminants work, other stations may be collecting information important to interpretation of monitoring data (e.g., climate-related observations)

INTERACT stations
monitoring particles/aerosols, pollutants:
AWIPEV Research Base, Svalbard
CNR Arctic Station Dirigibile Italia
Svartberget Research Station, Sweden
Sonnblick Observatory, Switzerland (Alpine)
Polar Environmental Atmospheric Research Laboratory, Canada
Nunavut Research Institute, Canada
Summit Research Station, Greenland
Villum Research Station?
Abisko?

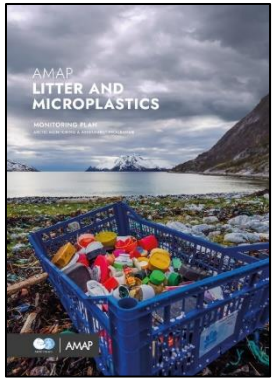
monitoring contaminants in plants, mammals, birds or fish:
Netherlands Arctic Station, Svalbard
Polish Polar Station Hornsund, Svalbard
KEVO Subarctic Research Institute, Finland
CEN Bylot Island Research Station, Canada
Nunavut Research Institute, Canada
Litlas Skard, Iceland
Skalanes Research Station, Iceland
Sonnblick Observatory, Switzerland
Krkonose, Czech Republic
Karkonoshe, Poland

Progress – Task 8.2 – Deliverable

Task 8.2 Development of protocols for screening monitoring at and close to selected INTERACT monitoring stations

Task: Design, in consultation with INTERACT station managers and others protocols for investigating the presence of chemicals of emerging concern at or around INTERACT stations using target and/or non-target screening methods

Activities: Communication with experts involved in screening activities under AMAP and NORMAN networks, etc.; AMAP 2021-2023 workplan includes work on guidelines that can be connected to the INTERACT activity



- AMAP litter and plastics monitoring plan and guidelines: overview / monitoring plan communicated to WP2
- **D8.2** Protocols for (target and non-target) screening of contaminants of emerging concern at INTERACT stations (Month 24 / Jan 2022) - REQUEST DELAY

Progress – Task 8.3 – Options?

Task 8.3 Enhancing screening monitoring applications at INTERACT Stations

Task: Implement and/or test protocols developed under Task 8.2, and where possible link this work into ongoing screening monitoring programs and networks

Activities: Communication with experts involved in screening activities under relevant initiatives including AMAP and NORMAN networks; deployment of passive samplers?

Passive air samplers: PUF disc (particulate plus gaseous); simple construction 200 $; video for operation; risks wind damage, etc. Met. data (temp/windspeed), 3-monthly … vs XAD passive sampler (OCs, OPEs and PFASs presence, very low levels; flame retardants < DL) Deployment at local dump/incineration sites? Analyses (1000 $/sample), shipping etc.
Snow/ice sampling (2022 campaign Alert Canada); PFASs

- **D8.3** Compilation of results from testing of protocols with Managers at selected INTERACT Stations (Month 36 / Jan 23)
- **D8.4** Plan, in consultation with INTERACT Station Managers and Researchers, for development of screening monitoring networks and enhancing application of screening monitoring (Month 42 / Jul 23)

AMAP Arctic Monitoring and Assessment Programme

INTERACT

Progress – Task 8.4 – Ongoing activity

Task 8.4 Informing appropriate agencies of potential threats from emerging pollutants

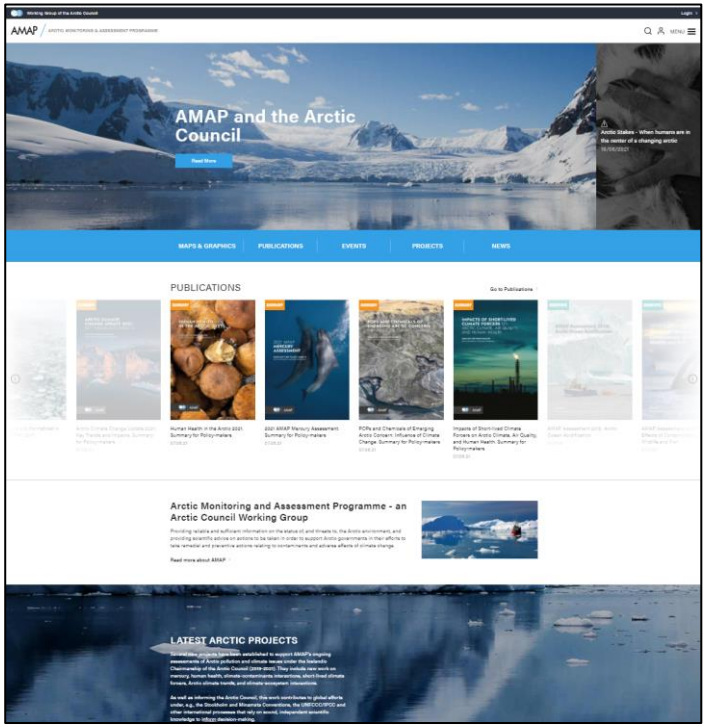
Status: Ongoing

Policy-makers summaries of AMAP 2021 assessment of climate change influence on POPs and mercury in the Arctic; Short film on AMAPs recent assessment work. See www.amap.no

AMAP local vs LRT assessment > 2023

Kick-off meeting March 2022.

INTERACT component? (for example on designing a passive sampling campaign for air measurements).



Progress – Task 7.5 – TIME TO ADDRESS THIS

Task 7.5 Ensuring a new generation of international environmental assessors.

Task: mentor active researchers from the INTERACT research community to build capacity and create a new generation of international environmental assessors.

Status: Request to INTERACT Community to identify interested young scientists who may be interested in experience working with AMAP

Contributing to ongoing assessment?
Links to GMOS-Train?

Requirements from others

… **work with station managers** (WP2) [**especially managers of 4 selected stations**] to identify potential sources of emerging contaminants of concern and reduce their impacts by:

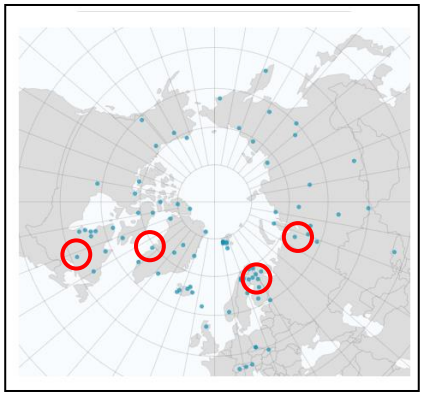
- Identifying/establishing screening monitoring protocols for emerging pollutants; field testing protocols at INTERACT stations
- Working with INTERACT station-managers/researchers to promote and support screening monitoring studies
- Refining existing systems at INTERACT stations to minimize introduction and use of new chemicals/pollutants of concern

AMAP Arctic Monitoring and Assessment Programme

INTERACT

Next steps

1. Continue contacts with external experts (ongoing)
2. Survey follow-up
   - Selected stations
     - ✓ Oulanka Research Station, Finland (19)
     - ✓ Arctic Station, Greenland (73)
     - ➢ The Arctic Research Station, Russian Federation (30)
     - ✓ Centre d'étrudes nordique, CEN) (65)
   - Other stations
3. Work on D8.2 (Request for 2-month extension)
4. Identify researchers active in contaminants work using INTERACT stations in their work, and candidates for mentoring (task 7.5) – Way forward? Potential contributors to new AMAP POPs assessment with focus on local sources (2021-2023) >>> Workshop March 2022



Thanks …

Questions?

AMAP
Arctic Monitoring and Assessment Programme

INTER⇌AC