

Temporal dynamics of anthropogenic pollutants in sediments of Kongsfjorden- Krossfjorden system (Svalbard, Norway)

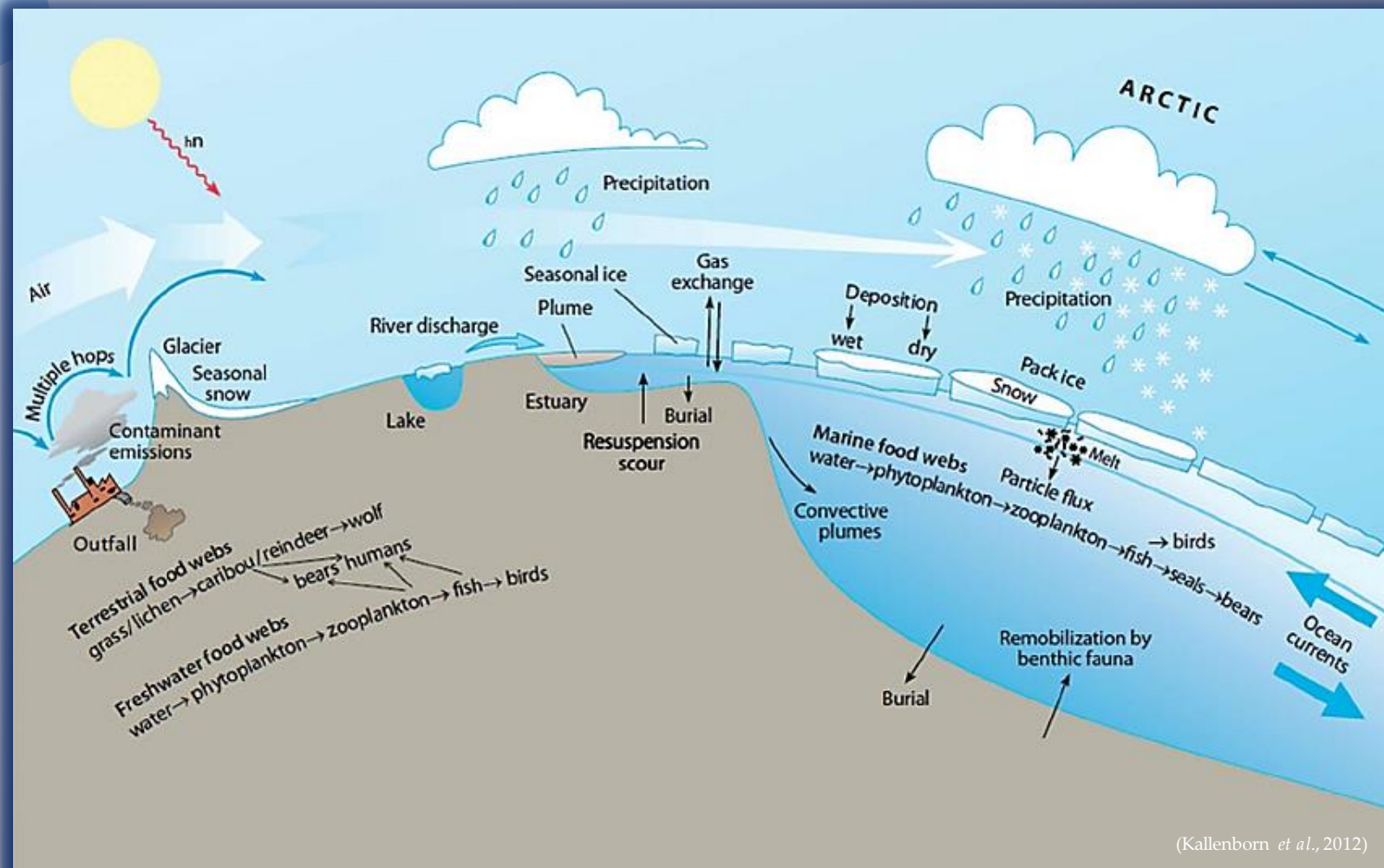
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Roma, 22 – 24 settembre 2021

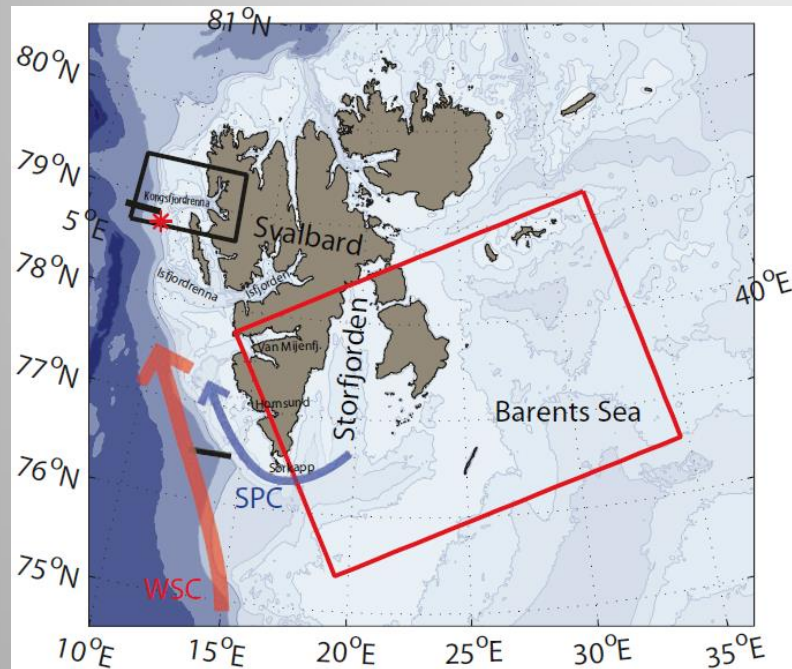
Introduction & Objectives

- Contribution of **suspended material** released by the glaciers affecting the **sediment characteristics** and **accumulation rates**
- Effects of **Atlantification** on **contaminant fluxes**
- Contamination trends**, focusing on selected POPs and CECs, comparing **local sources** with **LRT** and **secondary emissions**
- Evolution of the **contaminant concentrations** over the **last century**

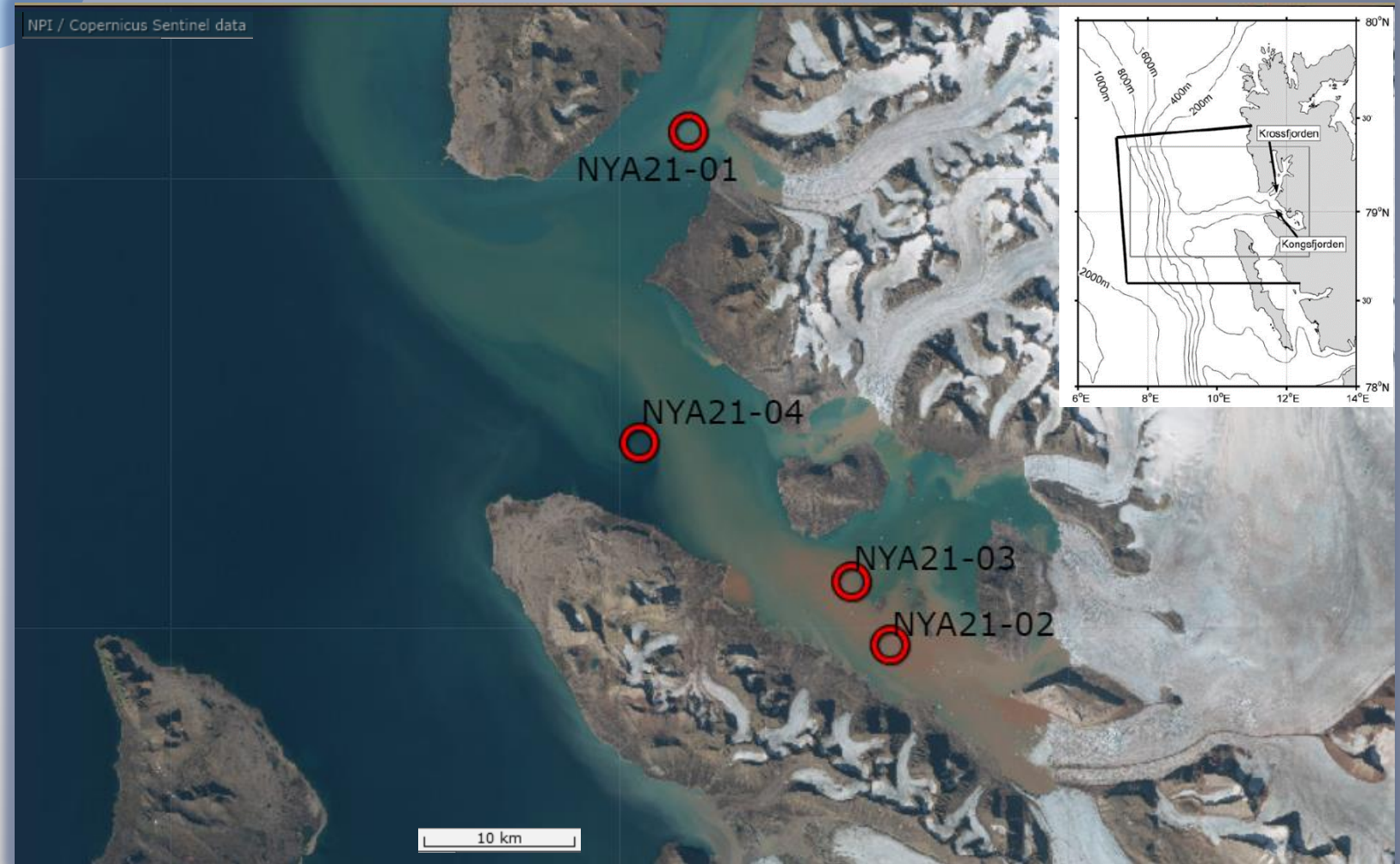


Study Area

Kongsfjorden-Krossfjorden System (KKS)

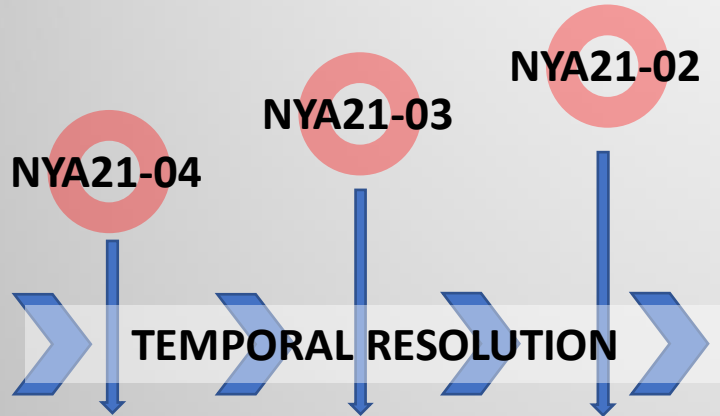


(Tverberg *et al.*, 2019)

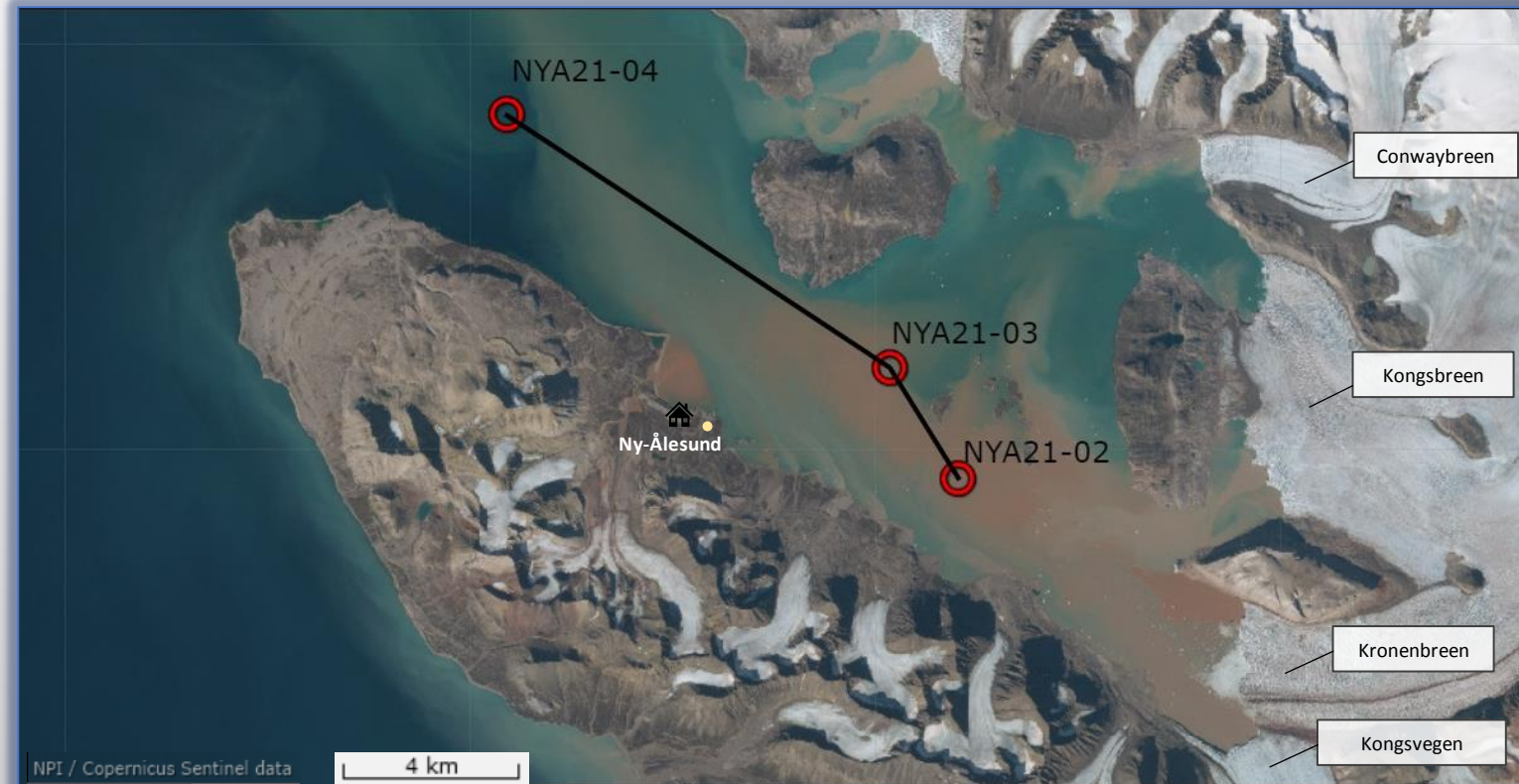


Kongsfjorden sampling

What happened between 2011 and 2017 to present?

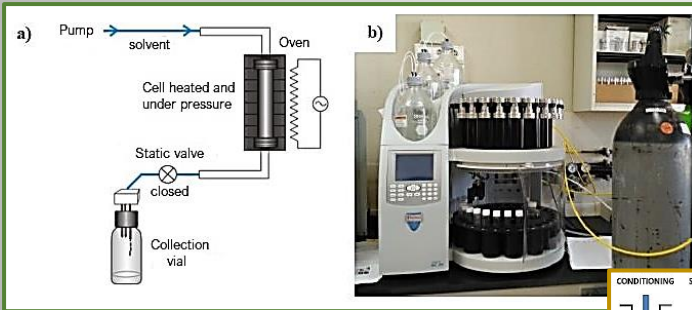


Core	NYA17-154	NYA11-09	NYA11-01
Sedimentation rate (cm yr ⁻¹)	0.19	0.44 (~0.8)	~1.2
Dating method	CF-CS model on excess ²¹⁰ Pb profile and radiocarbon	CF-CS model on excess ²¹⁰ Pb profile (¹³⁷ Cs)	¹³⁷ Cs peak of Chernobyl



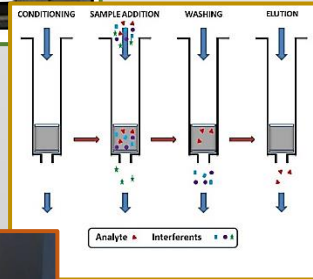
Organic contaminants

NYA11-09

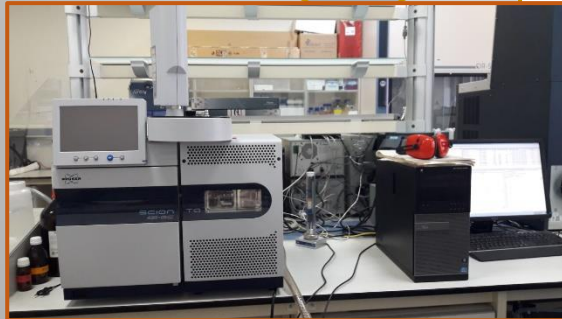


Accelerated
Solvent
Extraction
(ASE)

Solid Phase
Extraction
(SPE)



Gas
chromatography
tandem Mass
spectrometry
(GC-MS/MS)

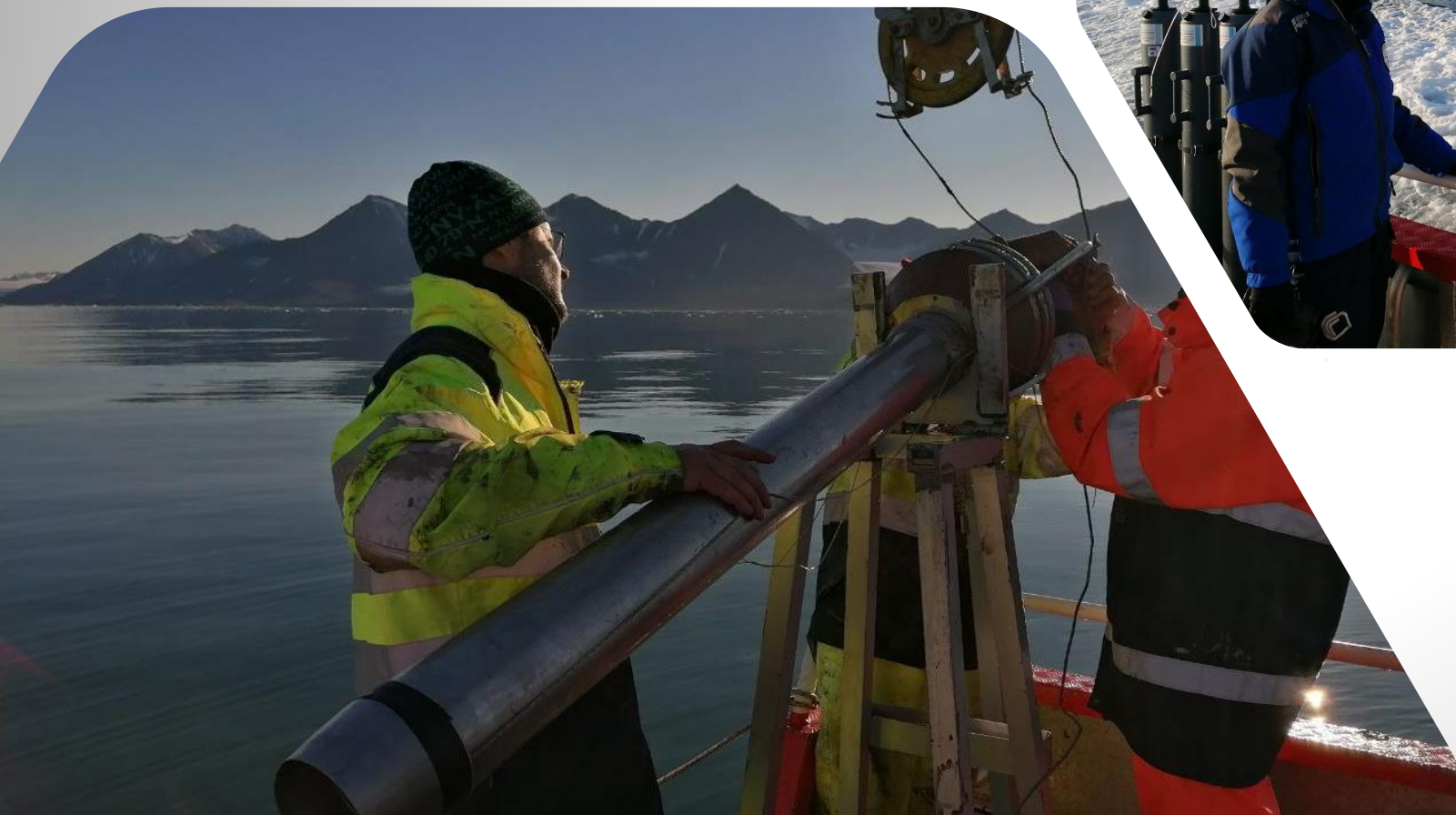


Legacy

- Polycyclic aromatic hydrocarbons (**PAHs**)
- Polychlorobiphenyls (**PCBs**)
- Organochlorine pesticides (**OCs**)

Emerging

- Personal Care Products (**PCPs**)
- Polybromo biphenyls (**PBBs**)
- Several Polybromo diphenyl ethers (**PBDEs**)



Thanks
for your
attention!