Statement for the 2022 Arctic Observing Summit

Wildfires as a key theme of Arctic PASSION

Heïdi Sevestre[a], Jan René Larsen[a], Vito Vitale[b,c], Mikko Strahlendorff[d], Anni Kröger[d]

[a] Arctic Monitoring and Assessment Programme, [b] Institute of Polar Sciences, [c] Italian National Research Council, [d] Finnish Meteorological Office
Contact: Heïdi Sevestre (heidi.sevestre@amap.no)

The past few years have seen a dramatic increase in the frequency and intensity of extreme wildfire events in the Arctic. Despite the numerous well-documented events that occurred in the last 3 years across Fennoscandia, Alaska, Greenland, and the Russian Federation, the long-term picture is less obvious, but their impacts on ecosystems and communities are clear. Wildfires are a key topic of the new Arctic PASSION project. A pilot service called "Integrated Fire Risk Management" is being developed to address gaps in the provision of information for first responders in the Arctic. In addition, wildfires are currently being considered as a potential "Shared Arctic Variable".

Introduction to Arctic PASSION

Arctic PASSION ('Pan-Arctic observing System of Systems: Implementing Observations for societal Needs'), a European Commission Horizon 2020 Program officially started on July 1st 2021. The project, composed of 35 partners from 17 countries and led by the Alfred Wegener Institute (AWI) will run for a total of 4 years. By building on existing EU and international work (INTAROS, KEPLER, RNA-CoObs, CCADI, etc) Arctic PASSION aims to tailor the observation systems to match better with the needs of diverse user groups, which range from the local people and academia to industry and decision-makers[1].

As the Arctic is transitioning to a new state, local and indigenous communities, the private sector, and governments need timely and unrestricted access to essential information services. Introducing: the pilot services. To answer these identified needs Arctic PASSION will co-create 8 new EuroGeo pilot services. They will cover a range of topics and aim, for example, to provide new information to support emergency preparedness, food security, responses to climate and socio-economic changes, etc, focusing on areas that are currently still inadequately served. Priorities for these pilot services have been established by the Arctic Council, the Arctic Council Working Groups, the Arctic Science Ministerial, the Arctic Observing Summit, and either build on information or services already in place or result from the Arctic Council Working Groups and/or from EU projects[1].

A new Pilot Service on Wildfires

Pilot Service PS4 INFRA stands for Integrated Fire Risk Management. This service is developed by CNR (National Research Council of Italy) and CAE, with the strong support of SnowChange.

The overall objective of INFRA is to develop an integrated web-based system that, by collecting data and coupling physical and parametric models, will help support the prevention and forecasting of forest fires, the sighting and monitoring of forest fires, the emergency management of shutdown operations, and finally help with post-event management and damage assessment. Concretely, three innovative products will be developed by INFRA: a risk map, an early identification of outbreaks, short-term forecasts on the evolution of the fire[1,2]. The co-design and co-development of these products with Arctic indigenous communities and other stakeholders are key to achieving the ambitious goals of INFRA.

Wildfires as a Shared Arctic Variable?

Wildfires are also being currently discussed as a potential SAV: Shared Arctic Variable. The concept of SAVs has been defined as being more inclusive and useful in contrast to Essential Arctic Variables. SAVs "could and should address information needs expressed by diverse user groups such as Arctic local and indigenous communities, Arctic and global climate research community, private sector, policymakers". The identification of SAVs within Arctic PASSION is guided by the ROADS (Roadmap for Arctic Observing and Data Systems) process of the Sustaining Arctic Observing Network (SAON)[3,4]. The definition of the SAVs will be led by Experts Panels composed of experts from indigenous organizations, local communities, governments, industries, and academia. Besides wildfires, sea ice and permafrost have been defined as "proposed working themes" to help initiate the creation of, and discussions within the expert panels. Working closely with PS4 INFRA will certainly strengthen the discussions on wildfires as a potential SAV.

Timeline for the discussions on wildfires as a potential SAV:

- 2022:
  - one (1) in-person workshop for the Expert Panels (in Helsinki or Sodankylä)
  - three (3) teleconferences for the Expert Panels
  - attending the Arctic Council Resilience Forum (at the end of 2022)
- 2023:
  - one (1) in-person workshop for the Expert Panels (in Helsinki or Sodankylä)
  - three (3) teleconferences for the Expert Panels

References:

[1] Arctic PASSION Grant Agreement

[2] Description of Pilot Service 4 Arctic PASSION https://arcticpassion.eu/wp4/ps4/

3 AOS 2020 - Key Conclusions and Recommendations https://arcticobservingsummit.org/wp-content/uploads/2021/06/AOS2020_conference_statement.pdf

4 Starkweather, et al., 'Sustaining Arctic Observing Networks (SAON) Roadmap for Arctic Observing and Data Systems (ROADS), Whitepaper to the Arctic Observing Summit 2020, https://arcticobservingsummit.org/aos-2020-white-papers-and-short-statements