

NATO - Science and Technology Office (STO)

02/08/2021

NATO research on Arctic regions obtains a significant dataset.



NRV ALLIANCE is returning from the Nordic Recognized Environmental Picture 2021 (NREP21) sea trial, conducted in the Greenland Sea from 11 June – 12 July 2021. Funded by NATO Allied Command Transformation, STO Office of the Chief Scientist and US Office of Naval Research, NREP21 was part of a joint oceanographic campaign planned in coordination with the Italian Naval Hydrographic Institute's High North 2021 sea trial.

During NREP21, CMRE scientists and engineers were able to gain a better understanding of the transforming Arctic Ocean, a relevant theatre for geopolitical and environmental reasons as a consequence of climate change.

Indeed, as outlined during the Brussels Summit meetings by the Heads of State and Governments of the 30 members of NATO on 14 June 2021, climate change is a “threat multiplier that impacts Allied security”, affects planning and the resilience of military installations and critical infrastructure, and “may create harsher conditions for our operations”.

During the sea trial NRV ALLIANCE faced severe operational conditions caused by a larger than average ice distribution, occurring in response to winds that pushed the sea ice towards the area where the research vessel was operating.

Nevertheless the trial was a success, having CMRE researchers collected more than 100 salinity and temperature profiles, and deployed two long-term observational instrumentations, technically named “moorings”. These are long chains equipped with advanced sensors that can monitor for long periods the temperature evolution and the soundscape of fixed points, respectively, in the proximity of Svalbard Islands and near the Molloy Hole, the deepest point of the Arctic Ocean.

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Over the next months, in coordination with international scientific institutions, CMRE will lead a careful integrated analysis of the NREP21 data, fusing the findings with numerical model results and oceanographic “Big Data”.

Results will increase the knowledge on how changing oceans can impact and modify global climate dynamics, and provide new insights on how underwater sounds propagate in a region characterized by extremely fast ice melting.

In the future CMRE will continue to help NATO and the Nations understanding the implications of climate change on defence and security and adapt to upcoming scenarios in the changing Arctic region.

Published by STO