Project acronym: MUSKHEALTH

Project title: Advancing muskox health knowledge, surveillance, and prediction in Zackenberg

Project leader: Jesper Mosbacher, Norwegian Polar Institute, Norway

Discipline: Earth Sciences & Environment: Ecosystems & Biodiversity

Station(s): Zackenberg Research Station (Greenland/Denmark)

The goal of this project is to investigate the role of trace minerals in Arctic wildlife health and their effect on population dynamics. Understanding the factors driving differences in population trends will provide critical insights into the ecology and resilience of arctic ungulate populations and inform wildlife management strategies. Preliminary results from the applicant show that trace minerals play an important role for wildlife population trends, with increasing and decreasing population having high and low concentration of important trace minerals, respectively. To expand on these findings, INTERACTACCESS will allow for the applicant to work with the most well studied muskox population in the Arctic at Zackenberg Research Station. Here the muskox population is annually monitored, and several individuals are captured for movement studies. To complement the ongoing monitoring and movement studies, I have been invited to join a capture project at Zackenberg Research Station during 3 weeks of September/October 2022. From captured muskoxen, I will draw blood and gather hair samples, to investigate the trace mineral levels and compare to associated health metrics. These include data on demography, serology for infectious diseases, body weight, pregnancy, and more. This will allow for detailed examinations of the mechanisms whereby trace minerals levels can affect not only individuals and their health, but the population trends. The use of hair to monitor trace mineral levels has the potential to be viable tool to reveal mineral deficiencies in remote wildlife populations and allow for timely detection of changes in population status and inform management.