



Project acronym: VegClim

Project title: Linking modelled species distributions to local population processes in Greenland vegetation communities for an increased understanding of climate change effects

Project leader: Nathalie Chardon, WSL-Institute for Snow and Avalanche Research (SLF), Switzerland

Discipline: Earth Sciences & Environment: Ecosystems & Biodiversity

Station(s): Greenland Institute of Natural Resources (GINR) (Greenland/Denmark)

Transnational Access (TA) allowed me to visit the Greenland Institute of Natural Resources to collect fine-scale spatial data on shrub species abundances and community characteristics across the varied Nuuk and Kobbefjord landscapes. I sampled several hundred 90x90 m spatial grids that had been predicted as low, medium, or high abundance by Boosted Regression Tree abundance models (BRTs) for the region. The resulting high precision dataset will now allow me to i) determine the drivers of regional shrub abundances and their future distributions, ii) understand how microhabitat conditions affect Arctic ecosystems, and iii) validate spatial prediction models of shrub abundances. This dataset, which is spatially random and independent from the data used to train the BRTs, will allow me to assess what environmental parameters cause differences in model performance. Understanding where and why such model performance differs will ultimately yield improvements to spatial prediction tools at an Arctic and global scale. The extensive presence-absence data part of this dataset is furthermore useful to ecologists studying Arctic shrub distributions. As an international and interdisciplinary research project, this work directly ties in to TA goals, and the resulting data is critical for future ecological research focused at understanding and predicting the impacts of climate change in the Arctic.