Project acronym: VEGA

Project title: Vegetation Dynamics of the Arctic

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Discipline: Earth Sciences & Environment: Ecosystems & Biodiversity

Station(s): Ny-Ålesund Research Station - Sverdrup (Svalbard/Norway), NIBIO Svanhovd Research Station (Norway), Khibiny Educational and Scientific Station (Russian Federation), Sudurnes Science and Learning Center (Iceland)

Arctic vegetation change in response to global warming is currently a one of the key scientific concern. to understand it, we need to identify and describe the underlying mechanisms. Thus, we need to understand how present-day community structure hinges on the population dynamics of the different species of the community as well as the interactions between them and the dynamic in response to recent global warming. The project aimed at describing ecological patterns and identifying the mechanisms underlying the plant communities dynamic across the Arctic. The understanding of the mechanistic basis will serve at predicting future ecological changes. By combining empirical and theoretical work across a wide range of INTERACT stations through the Arctic region, we aimed at resolving the local variation at each site and answering the question:To what extent does vegetation structure reflect large- and local-scale environmental variation, biotic interactions and historical legacy such as the postglacial dispersal patterns? To address this question, we apply for combined TA access (40 person-days from mid-June to late July, on 4 stations) with RA access (4 person-days on 8 stations). For each RA station, 4 plots of 1m2 will be set. On each plot, plant, soil and root will be sampled following a clear and reproducible methods. First, the data generated will allow us to estimate in what extent the current community composition of vascular plants reflects biotic interactions. Second, to test the stress-gradient hypothesis, which posits an increasing incidence of positive associations with increasingly adverse environmental conditions. Finally, at large spatial scale, community composition patterns will be used as a proxy of potential postglacial dispersal route.