



Project acronym: a

Project title: Tundra shrub growth in a changing Arctic - influence of climate and topography - compilation of dendrochronological analyses in Russian Arctic (72°N, Lena Delta)

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Discipline: Earth Sciences & Environment: Other - Earth Sciences

Station(s): Research Station Samoylov Island (Russia)

Ongoing Arctic change is being manifested by shifts in the vegetation composition and abundance throughout many regions of the Arctic. These changes are primarily reflected by increases in shrub growth but great heterogeneity across both space and species is observed according to so called “greening of the Arctic” phenomenon.

The project aims to specify main climatic and topographic drivers of tundra shrub growth in central Lena Delta and to verify if trends of shrub growth vary across the region, characterized by variable permafrost conditions. Considering highly heterogeneous and vast area of Lena Delta, study will be conducted only on Samoylov Island and its vicinity. We hypothesize that both growth and climate sensitivity of shrubs diverse across the landscape, i.e., between expanding shrub patches (flood plain), disturbed (for e.g. active thermoerosion site) and undisturbed site (Yedoma upland or rock outcrops). In our project we aim to compile dendrochronological analyses together with remote sensing data in order to assess shrub growth dynamics and evaluate the relationship with optical and radar remote sensing data to upscale across the space for the central Lena Delta.