



**Project acronym:** Huperzia

**Project title:** Plant diversification facilitated by climate change: evolution of ancient lycopods connected with arctic, post glaciated and boreal regions

**Project leader:** Libor Ekrt, University of South Bohemia, Czech Republic

**Discipline:** Life Sciences & Biotech: Other - Life Sciences & Biotech

**Station(s):** Western Arctic Research Centre (WARC) (Canada), Greenland Institute of Natural Resources (GINR) (Greenland/Denmark), Toolik Field Station (USA)

Climate change is a major contemporary challenge, affecting all biota, including plants. The changes in vegetation are being studied extensively, but this project focuses on speciation driven by climate change, which has received little attention. Nevertheless, speciation is a major force shaping plant diversity, which in turns affects other organisms. This project studies the much-affected regions of boreal, arctic and alpine parts of North Hemisphere. To examine the aspects of speciation, the lycophyte genus *Huperzia* was chosen based on its unique combination of characteristics. The genus includes many ploidy levels across different altitudes and latitudes, which may be studied in respect to cyclic glaciation and deglaciation during Pleistocene. *Huperzia* belongs to the ancient seedless lycopods, their ancestors have adapted to major climatic changes over time. A combination of flow cytometry, modern molecular sequencing methods and spore assessment will greatly improve our understanding of how climate change drives evolution of plants and what to expect in the future.