



**Project acronym:** CIWB

**Project title:** 1. Cold Ice in a Warm Bath? Capturing proglacial lake temperature and Arctic glacier retreat in a changing climate

**Project leader:** Adrian Dye, University of York, United Kingdom

**Discipline:** Earth Sciences & Environment: Global change & Climate observation

**Station(s):** Tarfala Research Station (Sweden)

This CIWB 2019 project will be the first to capture the spatial pattern of proglacial lake temperatures over the melt season and associated ice-margin recession of an Arctic glacier through analysis of the terminus geometry. The field research will be conducted from Tarfala research station (Sweden) and focus on Norra Kaskasapakte glaciaren proglacial lake (ice-water contact), with comparison to Isfallsglaciär lake (non-ice contact) to better understand the role of the lake-ice interface on proglacial lake temperature structure. Temperature surveys conducted by installing thermistor strings at various locations and thermistor survey from an autonomous surface vessel and kayak. The impact of this warm water on the ice front will be identified through analysis of timelapse imagery (SfM) and sonar surveys to classify calving events associated with thermal erosion and correlated with terminus positions mapped from high resolution satellite imagery (Planet 3m).