



ASP PROJECT SUMMARY

PART 1: Fill in part 1 before field season, and forward to the relevant Field Campaign Coordinator

Title and year of campaign	Title: Nutrient limitation of primary producers in High-arctic streams 2014
Title of sub-project	
Name of Principal Investigator(s) (PIs)	Tenna Riis
Project lead (if different from above), indicate position (MSc, PhD, etc)	
E-mail address of contact person	Tenna.riis@biology.au.dk
Name of all planned participants listed by institution	AU: Tenna Riis ; Simon Rosenhøj Leth UoM: GINR: Other :
Planned field work start / end dates	
Planned field work site	

Short project description and objectives for the field season in question (150 - 250 words).

A change in nutrient concentrations will likely alter the structure of primary producers (biomass, species composition) and ecological function of the primary producers (primary production and nutrient uptake) in arctic streams. This can potentially result in a trophic cascade and thus influencing higher trophic levels in arctic streams and change the proportional contribution of primary producers (benthic algae, periphyton and moss) in the stream. In order to predict future changes it is important to increase our knowledge on primary producers in streams with different water source and how they are affected by factors impacted by climate change.

Our objectives were therefore: 1) To determine the assemblage and biomass of primary producers in five Arctic streams with different water source. The assemblage of both bryophytes and microalgae will be investigated; 2) To measure primary production on habitat scale dominated by different primary producers (epilithon, epipellon, epiphyte, moss); 3) Identify nutrient limitation and uptake rates of primary uptake compartments in the streams.

End of PART 1

PART 2 Fill in part 2 after field season, and forward to the relevant Field Campaign Coordinator

Name of all actual participants listed by institution	AU: Tenna Riis ; Simon Rosenhøj Leth UoM: GINR: Other :
Actual field work start / end dates	1/7-29/7 2014

Actual field work site	Zackenberg
Number of man-days used in field (specify for participants)	Tenna Riis : 5 Simon Leth: 20 (approx.)

Short summary, main achievements and difficulties encountered during field season (150 - 250 words)

We collaborated with a British team (Alexander Milner and Cathrine, University of Birmingham) throughout the entire field period. Together we mounted hydrometric stations in three streams in the area and measured the water chemistry. We conducted five short-term nutrient release experiments in the Zackenberg area. We placed nutrient diffusion substrates in the same five streams to investigate the nutrient restriction of the biofilm. We collected biofilm and moss for identification. We measured the biomass of biofilm in the streams. Furthermore we tried to measure the primary production in the streams, but due to bad weather conditions, we did not succeed. We hope to publish data in 2015-16.

Photos (1 – 3 relevant photos in high resolution. Attach all photos as individual files)

Photo 1



Credit: Simon Rosenhøj Leth
Caption: Hydrometry station at Kærelv

Photo 2 (field work)



Credit: Simon Rosenhøj Leth

Caption: Nutrient diffusion substrate experiment at Kærelv.

Photo 3 (field work)



Credit: Simon Rosenhøj Leth

Caption: Nutrient experiment at Kærelv

Acknowledgements (funding agencies, etc.)

Arctic Research Centre and Carlsberg Foundation