

**Subproject: Climate and lake ecosystem dynamics in the high Arctic, over the Holocene, using lake sediment records**

Actual field dates: 2. – 18. August 2016

Field site: Lakes in the McCormick Fiord area north east of Qaanaaq, Greenland

Number of man-days in the field: 55

**Summary:**

The limnology group mainly worked in a valley in the McCormick Fiord area 30 km NE of Qaanaaq (Figure 1). Local hunters took the group and the equipment into the field using their private boats (Photo 2). The main task was to collect undisturbed sediment samples from lakes using various coring equipment and to sample the same lakes for water chemistry, water physics and biological parameters such as plankton, fish (caught in 4 lakes), macrophytes and invertebrates for isotope analyses. Long and short piston cores (Photo 3) plus gravity cores were collected from 8 expected isolation lakes from 14 to 88 m altitude. In total, ca. 10 m sediment cores were recovered. In addition one short core was recovered from each of the lakes for detailed analysis of biological remains in the upper 10-30 cm to study biological changes during the recent centuries. The long cores have not been opened yet but we saw changes in sediment colours in more of the cores suggesting that the transition from marine to lacustrine sediments is present. Selected short cores have been split into 0.25 cm subsamples, and selected cores will be analysed for algae pigments, diatoms and zooplankton remains. Sediment surface samples (upper 1 cm) were taken and will be included in an existing and still developing calibration dataset. Besides greenhouse gas emission was measured in three different lake types; dystrophic, clear, silty. These are the first GHG measurements in high arctic Greenlandic lakes.

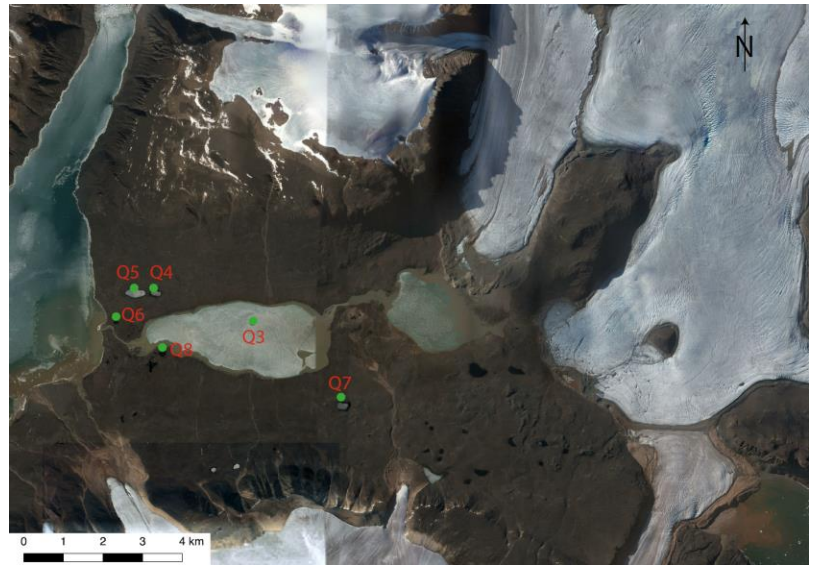


Figure 1



Photo 2

**Photos:**

Figure 1: Credit: Astrid Strunk

Caption: The investigated lakes located app. 30 km NE of Qaanaaq in McCormick Fiord

Photo 2: Credit: Mikkel Frstrup Schou

Caption: Packing for going to McCormick Fiord NE of Qaanaaq

Photo 3: Credit: : Mikkel Fristrup Schou

Caption: A long sediment core collected in a deep clear water isolation lake

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Photo 3