

Project acronym: CAMP-SOC

Project title: Soil Organic Carbon Stocks in the Central Asian Mountain Permafrost Region

Project leader: Peter Kuhry, Stockholm University, Sweden

Discipline: Earth Sciences & Environment

Station(s): Aktru Research Station (Russia)

The objective of this fieldwork is to conduct a landscape-level soil organic carbon (SOC) inventory in the vicinity of Aktru field station (Altai mountains, Russia). The most recent update of the total SOC storage in the northern permafrost region (Hugelius et al., 2014) includes a significant increase in the number of pedons considered for the assessment. However, it also identifies remaining geographic gaps in data coverage. These include Eurasia, mountain permafrost and permafrost soils in forest (and steppe) regions. Therefore, the location and environmental settings of the area in the vicinity of Aktru station are ideal to cover these gaps at one and the same time.

Fieldwork will be conducted in the 2nd half of August 2017 to coincide with deeper seasonal thaw of the permafrost ground. The team will consist of team leader Professor Peter Kuhry and two MSc students to be selected from those currently enrolled in the Physical Geography program at Stockholm University (both Swedish- and EU-nationals). The collected materials will be part of two thesis projects to be completed by these MSc students in September 2017-June 2018, under supervision of the team leader.

First, a field reconnaissance will be completed to identify the major permafrost landscape units in the study area. Subsequently, 3-4 transects of 500-2000 m long will be established to cross all major landscape units. Along these transects, 5-10 soil profiles will be collected at strictly equidistant intervals to prevent subjective choices in specific sampling locations. The active layer will be sampled by digging a pit and inserting a fixed volume cylinder horizontally into the soil profile. The permafrost soil samples will be collected by gradually hammering a steel pipe at 5 to 10 cm intervals into the ground. Collected soil samples will be transported to the state-of-the-art soil laboratory facilities in the V.N. Sukachev Institute of Forest, Krasnoyarsk (Russia) for further analyses. Our results will be compared to those currently being processed for fieldwork conducted in the Ogilvie and Richardson Mountains, Yukon Territories (NW Canada) in August 2015.