GINO WATKINS MEMORIAL FUND AND EDWARD WILSON FUND
PRELIMINARY REPORT FORM

EXPEDITION LEADER:	EXPEDITION NAME:	EXPEDITION DATES:
Rebecca Vignols	**Melting Snowpack changes in Arctic Russia**	April 4th 2016 to May 23rd 2016

Despite a rocky start with our plane having to land in Murmansk instead of Apatity due to weather conditions, we made it to the Khibiny Mountains of the Kola Peninsula where we were to spend just over 6 weeks collecting snow data. We stayed at the field research station of the Geography department of Moscow State University (MSU). Gareth Rees was present for the first few days, during which we undertook the reconnaissance of the area in order to select the locations for measurements. The rest for the season, Rebecca and Iain were the main participants of the expedition with Yulia Zaika being their main contact at base. We were the only scientists staying at the research station for most of the season, though for one week we were joined by student mountaineers from MSU. The facilities were excellent, we had access to wifi for most of the trip, and we were able to buy food at the supermarkets of the nearby town of Kirovsk.

We were also very lucky with the weather. The first two weeks were very cold and windy with lots of snowfall, but it was very sunny and warm for the middle part of the fieldwork. And finally, the last two weeks were grey and back to slightly colder weather, but relatively dry. Indeed, despite some very cold temperatures and many days warm enough for it to rain, the weather was always good enough for us to be able to work outside all day. Only two days were taken off for rest over the six weeks of data collection.

One of the main safety concerns of this expedition was the high avalanche risk in the mountains. We were nevertheless able to find many workable areas that could be accessed without avalanche risk. We managed to identify seven areas that could be and were safely visited to make measurements. For one field area, we were able to make use of a ski lift at a ski station to reach the lower part of a ridge which meant we only had to climb the last 150m to get a point at the very top. As the season went on, the snow of the ski slopes started to melt and the station shut by the end of week 4. We then had to climb the entire mountain to access the top pits. In most areas, we used snowshoes to get around. These were extremely useful in the soft snow, especially towards then end, when the snow was melting and the snowpack was extremely wet.

The expedition was a success not only in terms of the accessibility of the region and its weather, but also for the data collection. In total, we were able to collect data at 169 snow pits, the deepest of which was 2m90. When we first arrived, it seemed we would not be able to use the technique required to measure the liquid-water content (LWC) of the snow. However, Yulia succeeded in providing us with the necessary equipment and so, from week 3 onwards, we were able to measure the LWC of snow. This means data was collected for all the following snow parameters: snow depth, density, temperature, albedo, grain size and shape, and liquid-water content. A Skye radiometer was lent to us by Dr Olga Tutubalina for albedo measurements and the necessary kit for the rest of the parameters was brought over from the UK.

I would like to thank the Gino Watkins Memorial Fund on behalf of all members of the expedition for enabling us to undertake such exciting and enjoyable fieldwork.

Signed: RVignols Date: 13/06/16

To: The Secretary
Gino Watkins Memorial Fund Committee
Scott Polar Research Institute
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Figure 1: View of the Khibiny mountains from the top of Mount Yuksporr, one of our sampling areas.

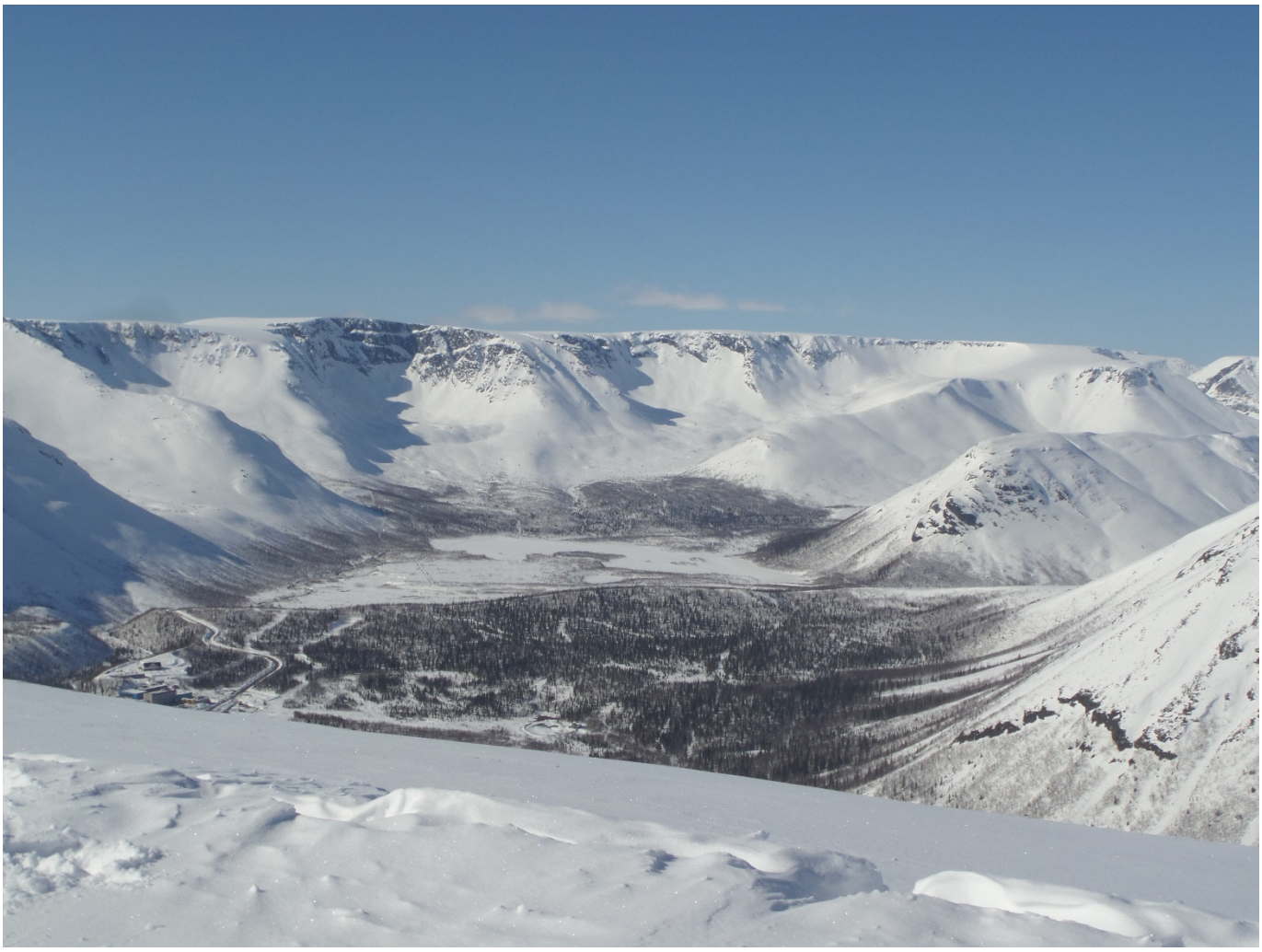

Figure 2: The field research station of the Moscow State University Geography department where we were based.

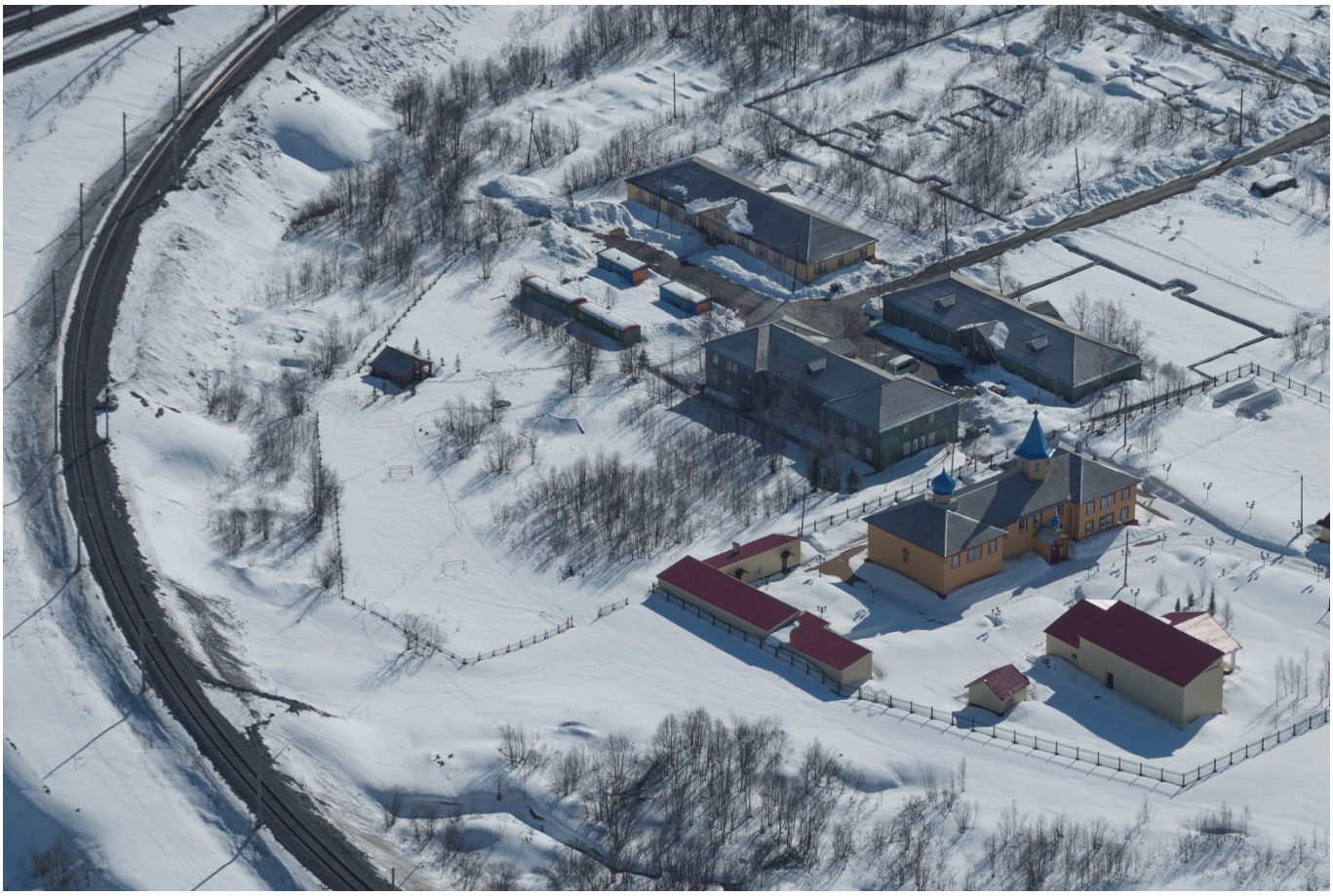

Figure 3: Rebecca making snow density measurements in a snow pit.