



MOUNT EVEREST FOUNDATION

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BRITISH MOUNTAINEERING COUNCIL

FINAL REPORT

1 - Name of Expedition: Himal Chuli glacier, Manaslu expedition

2 - Expedition Leader/Organiser: Anne Stefaniak
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3 - MEF reference: 19-02

4 - Country/Region: Manaslu, Nepal

5 - Names of all expedition members, indicating leader, climbing members, and support:

Benjamin Robson – Post doc at Bergen University
Asha Rai of Adventurous Nepal – local guide

6 - Original objective(s) of expedition – mountaineering / scientific / medical, include location of objective (or study area) with indication of special points of interest (e.g. ‘first ascent of NW Ridge’) and heights of peaks:

Objectives: Data collection is to be carried out on the formation of supraglacial ponds on the Himal Chuli glacier. A debris-covered glacier in the Manaslu region of Nepal which has previously been underexplored in the literature. Specifically, this project will test the following hypotheses at the Himal Chuli glacier:

- 1) Supraglacial ponds expand via deepening if areal expansion is impeded (e.g. by debris or ice wall).
- 2) Slope angles are less important than hydrological networks in supraglacial pond formation.
- 3) Valley topography represents a key control on pond locations in combination with suitable conditions of downwasting and stagnation.

7 - Overall dates of expedition:

September 2019

Arrival in Kathmandu 1st September

Depart for Manaslu 4th September

Trekking along Manaslu trekking circuit to access the glacier 4-9th September

Time carrying out research at the glacier 9-14th September

Trekking back along Manaslu circuit 14-19th September

Depart Kathmandu 22nd September

8 - Give the following details for each route climbed or attempted:

We accessed the Hinal Chuli base camp to carry out research on the Hinang glacier. Access onto the debris-covered glacier was aided by fixed ropes anchored at the top of the moraines. We were successful in accessing the glacier at a number of places and were able to carry out the research intended. We had hoped to access more supraglacial ponds but due to the undulating nature of the glacier surface with large ice cliffs this was not possible. Supraglacial ponds were accessed where they could be observed from the higher moraines and where we were able to identify them from satellite imagery collected prior to leaving the UK to aid finding the ponds.

The weather was largely good for the duration of the trip with some rain due to the monsoon season coming to an end. On the route back along the Manaslu trekking circuit we encountered a number of landslides which we were able to get around.

Location of field site

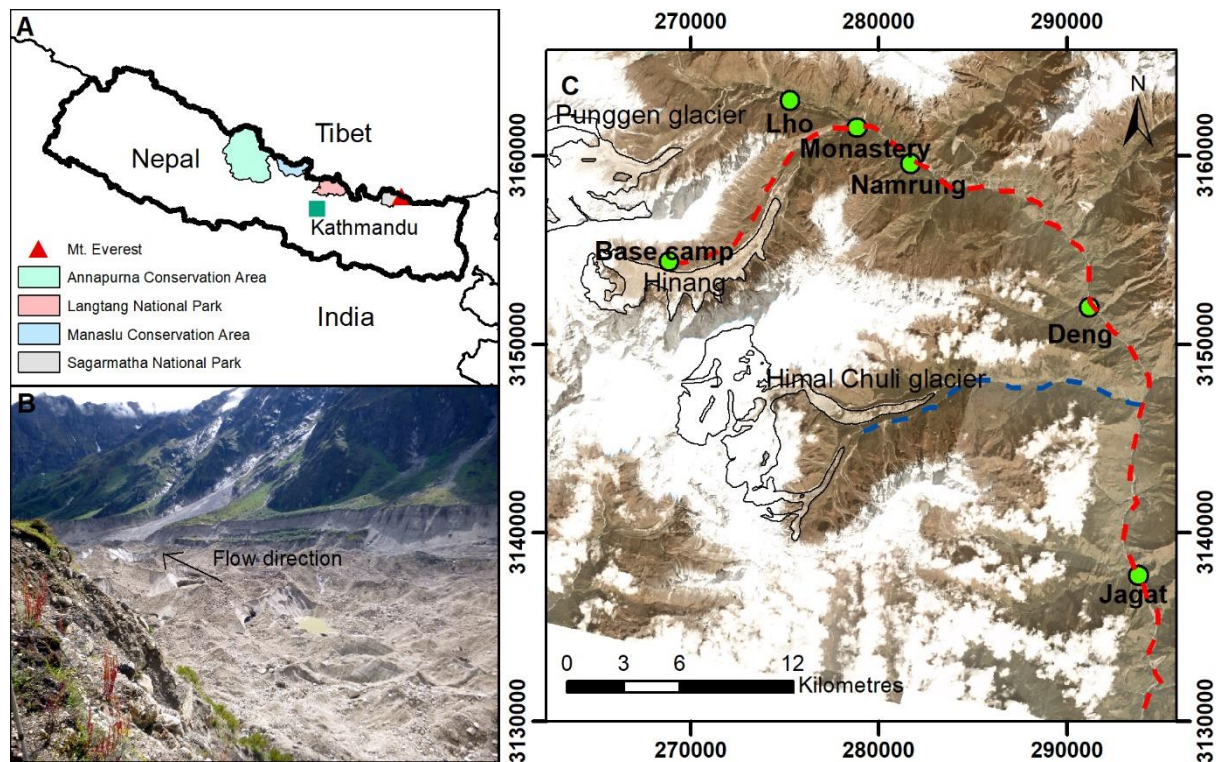


Figure 1: **A:** Location of the Manaslu region (blue) in Nepal; **B:** The Hinang glacier looking east showing the flow direction and some ponding on the glacier surface; **C:** Route taken (red line) to hike to the base camp on the north side of the Hinang glacier. The blue line shows the initial planned route to access the Hinal Chuli glacier which was not passable.

Photos of the Hinang glacier



Figure 2: Photos of the Hinang glacier highlighting the undulating surface topography and presence of supraglacial ponds.

Google Earth imagery

The most recent Google Earth imagery of the Hinang and Himal Chuli glaciers are from 2017 and although some areas are shown cloud free and easy to view, the Hinang glacier is often observed with snow, cloud or covered in shadow and therefore obscuring many of the features. Therefore for this research, specific satellite images which were free from cloud, snow and shadow have been used to assess the glaciers.

Suggestions for new routes or new study

The path up the Himal Chuli base camp appears to be seldom used with no other visits and only some yak herders encountered on our journey once passed the monastery. It is therefore assumed the number of ascents of the Himal Chuli are limited and could potentially provide an interesting area to ascend. In addition, the Himal Chuli and Hinang glaciers have not been studied previously (with the exception of Robson et al. 2018), and the Manaslu region have been vastly overlooked in regards the glaciological research in the Nepalese Himalayas. This PhD research aims to partly assess this research gap but the ongoing development of ice cliffs and supraglacial ponds and response of the glaciers to current and future climatic change.

Access and porters

Access to the Himal Chuli glacier was not possible due to unused paths which were no longer passable according to our guide and local people who stated that the paths on the map were overgrown and no passable. We therefore changed our plans in order to access the Hinang glacier, located just north of the Himal Chuli glacier which was similarly debris-covered and with a number of supraglacial ponds to assess. As this was a possibility prior to the expedition, we had planned visiting the Hinang glacier as a second/ back up option. Access to the Hinang glacier was similarly along another route marked on the map which passed by a monastery and yak herders near the glacier who were able to help provide further information regarding the current state of supraglacial ponds on the glacier and the best way to access them.

The path marked on the maps of the Manaslu trekking map showed the Himal Chuli base camp on the southern side of the glacier. However, the path was in fact on the northern side and it was clear that the southern side would have been impassable. From the base camp set up on the northern side of the glacier, we were able to set up at base camp and access the glacier with ropes to help lower us down onto the glacier surface.

The porters and local guide were indispensable to the trip. As all visitors to the Manaslu conservation area are required to have a guide it would not have been possible to complete the expedition without them. In addition the information they were able to glean from locals regarding access and routes to follow and where to source equipment and food along the way was fully appreciated.

Injury or illness

No illnesses were reported whilst away although first aid kits were taken and used including ibuprofen/paracetamol used for a sore leg by the guide. One minor injury occurred but could have been a lot worse. Whilst walking back from the glacier along the Manaslu circuit track, one of the porters stepped on a rock on the edge of the path which then moved and he fell off the path and down the side of the bank with a heavy rucksack on his back. Luckily it happened in a fairly wooded section which stopped his fall and preventing him going any further. The fast and rapidly flowing river was located at the base of the bank. The porter was able to get back up onto the path with some help and only suffered a cut knee and some grazes which were treated with the first aid kits.

Waste disposal

Waste was kept to a minimum throughout the expedition and as such a filtering water bottle was purchased prior to the trip to minimise reliance on bottled water and to provide safe drinking water whilst in the field. At base camp, all waste was collected and again kept to a minimum, using biodegradable products where possible, for example using biodegradable wipes. Toilet waste was kept to one location and the pit filled in prior to leaving. Other waste was either burnt or brought back with us and deposited at a suitable location.

Expedition accounts

Incoming funds were provided from the British Society for Geomorphology (£1000), the MEF grant (£2000) and NTU PhD support funds (£3000). Additional funds were covered by personal funds.

Table 1: Expenditure of the expedition.

Items	Outgoing
Flights – 2 people return	1722.12
Guide fees for 2 people including food and accommodation	3000.00

Kathmandu hotel – prior to expedition	115.80
Kathmandu hotel – on return from expedition	139.92
Research permit	533.00
MCAP permit	152.14
Tourist visa	40.00
Transport to and from the airport in the UK	196.47
Generator hire	266.25
Water bottle	38.49
Total	£6204.19

Many thanks to the Mount Everest Foundation and British Society for Geomorphology for funding this research. The data collected in the field will complement the remotely sensed data collected to assess the presence of supraglacial ponds on the Hinang glacier as part of my PhD thesis. In addition it is hoped that a publication will be produced including this data in due course.