

## Greenland: The Arctic Circle Trail

### EXPEDITION REPORT



#### **1. Introduction**

We are a team of four Imperial College London undergraduate students who went on an expedition in West Greenland from 19<sup>th</sup> August to 10<sup>th</sup> September 2019. We hiked the Arctic Circle Trail and explored both Ilulissat and Disko Island. The Arctic Circle Trail's name originates from its position: 40km north of the Arctic Circle. The trail itself is 200km long, and we began our hike at the edge of the ice sheet, 40km East of Kangerlussuaq (before the beginning of the trail) and finished at its end, in the coastal city of Sisimiut. The hike took us 11 days, during which we were completely self-sufficient, carrying all our supplies for the length of the trail. We then took the overnight ferry north to the Ilulissat Icefjord on 31<sup>st</sup> August, where we explored the UNESCO World Heritage Site which lies north of the icefjord. On 6<sup>th</sup> September, two members of the expedition took the ferry across to Qeqertarsuaq, a small village on a volcanic island off the west coast of Greenland from where we explored the surrounding area for the last few days.

To set the scene a little, Greenland has a country-wide population equivalent to that of Canterbury and is largely untouched, being 85% covered in ice. There are no roads outside of the small settlement in Kangerlussuaq and the city of Sisimiut, so the Arctic Circle Trail provided a true wilderness experience. The trail boasted beautiful landscapes and arctic wildlife, as well as the chance to walk on the one of the world's only ice sheets that is accessible by foot.

#### **2. Expedition Aims**

Before the expedition we set out a list of clear aims.

##### Primary aim:

- To plan and execute an 11-day hike of the Arctic Circle Trail, fully self-supported and carrying with us all the food and equipment we will require for the route

##### Secondary aims:

- To hike and camp within the Ilulissat Icefjord UNESCO World Heritage Site
- To summit Nasaasaaq, a peak south-east of Sisimiut
- To hike up Sugar Loaf hill, a prominent hill just outside Kangerlussuaq
- To challenge ourselves physically

- To immerse ourselves in the remote Arctic wilderness and escape the world of hyper-connectivity
- To document the trip and encourage others to pursue similar expeditions
- To get to know likeminded outdoor enthusiasts and bond as a team (three of the expedition members did not know one another before planning this expedition)



### 3. Expedition Team

Our expedition team consisted of four Imperial College London undergraduate students, most of whom did not know each other before undertaking this expedition

#### **Expedition Leader - Carla Huynh, 22**

- Final year BSc Geology student

#### Experience:

Previous Imperial College Exploration Board expeditions:

- September 2018: E4 Crete – 3 weeks of hiking in the mountains, gorges and coastline from East to West across Crete
- September 2017: GR20 Corsica – 2 weeks of mountainous hiking across the backbone of Corsica

Other relevant experience:

- Current: I am a British Army Reserve Physical Training Instructor and as such I frequently lead weighted marches carrying a load of 25kg and, as of changes coming on 1<sup>st</sup> April 2019, 40kg loads.
- July 2018: 102<sup>nd</sup> Nijmegen Marches (walk of the world) – 100 miles in 4 days
- July 2018: Summer Mountain Foundation course – 1 week of navigation skills in Snowdonia in preparation for the mountain leader qualification
- August 2017: 1 week mountaineering in Swiss Alps learning the basics of glacier travel and summiting Pigne de La Le (3396m)
- January 2016: 1 week winter survival course, Northern Sweden - 4-days of teaching and a 3-day 'survival phase' in which we had to live self-sufficient in the Arctic conditions



*Camping on the expedition phase of the Summer Mountain Foundation Course in North Wales*

#### First Aid Training:

- 2016: ESE fieldwork first aid training
- 2016: Cold weather injury first aid training (part of the Sweden expedition)
- 2012: Personal survival and lifeguarding qualifications

#### **Expedition Treasurer – Esme Hotston Moore, 22**

- Final year MEng Aeronautical Engineering student

#### Experience:

- 2015: 99<sup>th</sup> Nijmegen Marches (walk of the world) - 100 miles in 4 days
- 2012-2015: 4 successful completions of the Ten Tors Challenges on Dartmoor including over 30 full weekends of training and some river crossing training
- 2012-2015: Countless other adventure trainings with the Air Training Corps in diverse locations from Exmoor to Canada

- 2013: 5 week expedition to Finnmark, Northern Norway (within the Arctic Circle). 5 weeks of wild camping in Arctic conditions, walking all food, radio, safety and research equipment to base camp from the roadside and then several expeditions from base. Including: mountaineering experience prusucking, scaling a glacier and walking on the ice cap, training climbing out a crevasse, extensive scientific research, 24 hours of solitude (for personal development) etc. This expedition was through the British Exploring Society and I had only met the other participants at the briefing weekend.



- 2013: Gold Duke of Edinburgh Expedition in the Lake District and trainings
- 2013: National 3 Peaks Challenge
- 2012: Bronze Duke of Edinburgh expedition and trainings
- NB: although my most relevant/formal experience was several years ago, I am very physically active having ran a half marathon, cycled independently from London to Bordeaux and rowed at Henley in the past year.

#### Media – Imogen Scheel, 20

- 2<sup>nd</sup> year MEng Design Engineering

#### Experience:

- April 2013: Ten Tors Bronze Training
- April 2014: Ten Tors Silver Training
- August 2014: 3 Valleys and Bunderswitz hikes in Switzerland
- September 2014: Silver DofE
- April 2015: Ten Tors Gold Training
- August 2017: 3 peaks Lake District
- July 2018: Solo completion of the GR1 from Picos to Mediterranean, Northern Spain
- NB: River-crossing training in shallow and deep waters completed during all Ten Tors trainings mentioned above



**Photographer - Georgios Chatzitheoklitos, 24**Academic Background:

- 2016-Present: MSci Geophysics, Imperial College London

Mountaineering Experience:

- 2018: Led the Crete E4 Expedition, funded by the Exploration board. It was a 25-day, 320 km hike, with members with variable skills and coordinated so that Thomas Angus, Imperial's photographer could join.
- 2016-2018: Three times Authentic Athens Marathon finisher (PB: 4:11:00).
- 2017- 2018: Member of the Outdoors Club, weekly lead climbing and sport climbing in the UK and Greece.
- 2017: As part of a team funded by the Exploration Board, completed the GR20 in Corsica, the toughest trail in Europe.
- 2016: Organised, together with 2 other staff members, a 3-day hiking excursion in the Greek mountains and countryside for a group of 20 children aged 10-13, as part of the YMCA summer camp. I was the medical officer and responsible for finding safe places to sleep (we camped).
- 2016: Hiked the Rob-Roy way in the Scottish Highlands (120 km)
- 2015: Climbed and hiked in the Isle of Skye, as part of the Bart's Alpine Club.
- 2014: Organised a Hiking trip to the Norwegian Fjords.
- 2014: Climbed to the top of Mount Olympus twice in a week.
- 2008-2011: Member of Greek Ski racing team, competing in national and European level.

First Aid Experience:

- 2016: Completed Fieldwork first aid course, provided by the Department of Earth Science and Engineering.
- 2013-2015: Member of BL Lifesavers, where I taught basic first aid skills to children.
- 2013-2015: Various (and assessed) first aid teaching in Bart's Medical School.
- 2014: Internship at the A&E department of a busy Greek hospital where I trained in minor surgical procedures (incisions, excisions, wound sutures).

#### 4. Expedition Diary

We have included Georgios' account of the expedition along the Arctic Circle Trail and in Illulissat and then Imogen's account in Disko Island.

*Georgios' account:*

**London → Copenhagen                      Sunny, Warm**  
**19.08.19**

This morning I woke up early to have a haircut. We had spent the day before checking and double checking our bags, so I added the last items and lifted my 27kg excitedly ready to go. At the airport, it was stressful to take enough out of our packs as hand luggage to fulfil the 20kg checked in baggage restriction, but this was nothing compared to the worry that we were going to have to carry these heavy bags! We took our time after security so that Esme and I could enjoy some lunch before the flight. When we arrived at the gate, it was empty and they told us that we wouldn't have been allowed to board if we had arrived two minutes later!

The flight was on time, we spent it catching up on sleep and enjoying we slept and enjoying the nice view of Copenhagen. At the luggage carousel in Copenhagen, we were confronted once again with the fact that our packs were too heavy. It took us a lot of time to repack everything back into the bags, but at least we had the comedic relief of a child climbing up the carousel and dancing. Immy told us that she wished she had thought of doing the same when she was younger!

After a small adventure in the fully automated tube (where one member of the group managed to get left behind and the rest managed to miss their stop chatting!) we walked to the hostel. I tried to enjoy walking in a sunny city, as that would not happen again in the next 3 weeks! That night we feasted on Denmark's best burgers (featuring gravy on top) and enjoyed the last sleep on a bed for an indeterminate amount of time.

I enjoyed how good our rapport was within the group. Although we were all strangers (except Carla and I; this was our third expedition together) there was no awkwardness and we were all very friendly. Immy's humour was especially important in "breaking the ice"!

**Copenhagen → Kangerlussuaq              Sunny, Warm**  
**20.08.19**

We excitedly left our hostel beds early this morning (after trying and failing to not wake up our rommates) and marched towards the rush hour tube. The carriages were a squeeze with such large packs. At the airport we repeated routine of packing and unpacking, so our packs were less than 20kg. We rewarded ourselves with Danish pastries for breakfast and went to our flight (luckily on time having learnt our lesson the day before). At the airplane we had our first contact with the Inuit people (the locals of Greenland). One could mistake them for Asians, so they are easily distinguished from the Danes. The predecessors of the Inuits arrived in Greenland hundreds of years ago from Canada, thus they share a lot of traditions. We also learned that the term "Eskimo" can be considered offensive! In flight I saw a very interesting documentary about the first Greenlandic band to sing rock in the Greenlandic language, Sumé. They were active in the 70s in a time where there was a lot of tension in Greenland and they are credited with helping to achieve home rule.

It was a very interesting flight for those who were sat next to the window (lucky me!). We flew over Iceland, and then we saw the ice-free east coast of Greenland. As the plane

moved westwards the terrain became more and more icy until there was only white. It was a clear day; otherwise Greenland's ice-sheet could have been confused with clouds, since it is an unbroken white mass. As we reached the western edge of the ice-sheet and dropped in elevation, more features could be distinguished. Lakes of clear blue water and rivers started to appear, and the ice became greyer. Finally, the brown land with many lakes appeared and we could also see big braided rivers. When we left the airplane, we were greeted by the glorious arctic sunshine. Kangerlussuaq is the only international airport in the whole of Greenland, however it is smaller than one of Stansted's terminals. Somehow we still managed to get lost in that tiny airport! Kangerlussuaq, which was previously an American military base, currently has a population of 500 people. There isn't much to do there so as soon as we got to the campsite we wanted to explore further and visit a nearby lake. However, as we checked in we met Dr. Friese, the 70 year old German owner of the campsite. He had a huge belly and an even larger passion for the trail and Greenland. It became apparent that he is not making any money from the campsite and is running it purely out of passion. He told us that this year might be the last year that we could enjoy the trail in this secluded way, as there are plans to build a road there. He is planning to protest this, by walking the trail naked and ending in front of the Danish ministry. This will be an effective deterrent in my opinion. After that we bought the last supplies and gas and then walked to the rowing club in a nearby lake. The girls swam in the freezing waters and we enjoyed the walk, although we had to walk past the landfill. Back at the campsite, we met with the first Czech people of the trip, some young people who had just finished the trail. It was encouraging to see how sunburned their faces were, and they told us how good the weather was.

**Kangerlussuaq → Russel Glacier      Very cold, Sunny changing to rain**

**21.08.19**

It's my birthday!

After 9 hours of sleep we woke up excited and full of energy. We had tea and boarded a lorry that had been converted into a bus with a very funny Inuit driver that was going to take us to the icecap. On the way, we had many stops to appreciate the wildlife (musk oxen and reindeer). At every stop we felt colder and colder and had to put an additional layer on. When we reached the icecap it was misty, and the ice was very dirty. We learnt a lot, took dangerous pictures near a crevasse and saw mud being pushed towards the top of the icecap from the bottom (which is what made the ice look dirty). The other people from the tour took the bus back, and we stayed to enjoy a nice breakfast on the Icecap! There I was surprised with a birthday cake: a brownie from the flight with a lighter as a candle! I found this to be a very sweet move. The route towards the Russell glacier was really beautiful, as the fog had cleared. We were walking on vegetation with multiple colours, we could see parts of the icecap and other glaciers the background. The pictures don't do it justice! This was our first proper walk, so we started having longer conversations with each other, mostly trying to determine how many common friends we had! During this walk, we also had to deal with an issue that would become very common in the following weeks, pooing! We had to dig a hole, cover the hole and take with us the toilet paper we used. We found the camp spot that was recommended by the driver, and it was indeed spectacular, as we were really close the glacier and the fast-flowing river. We had dinner and we started enjoying this view, but it started to rain heavily. Unfortunately, we had to retreat to the tents, and morale dipped, as our clothes were very wet.

**Russel Glacier → Start of the ACT Intermittent sun and rain****22.08.19**

We woke up with the best view: the glacier and the river. It took us 2.5 hours to pack our stuff and have breakfast, and we were very sad to leave our spot. We passed by a lorry that was stuck in the sand, and a downed American fighter plane. The highlight of the day was going up Sugar Loaf Hill. We could see from the icecap to the fjord and the braided river. Immy wanted to top her supplies up so she ran to the shop in town, but she was 7 minutes late. We walked leisurely and visited the most northerly golf course in the world. We took a taxi from the town to the start of the trail, as we were told that the walk was uninteresting and on tarmac. We had dinner right before it started raining, and we talked about careers.

**Start of the ACT → Katiffik Sunny with light rain****23.08.19**

Today it took us 3 hours to prepare, even without having breakfast, as we had to repack all the food for the trail. I was a bit nervous as I wasn't sure how hiking with 25kg would go. We had breakfast at the first hut, an old and rusty caravan, overlooking a small lake. Walking was slow but steady. When we stopped for lunch it started raining heavily, and it took us a long time to boil the water for the cous-cous. We met a Saudi guy coming the other way, who suggested that we might be lucky and find a canoe at the hut tonight. The rest of the hike went slowly, as my hipbones stated to get a bit numb because of the weight of the bag. I was compensated in a way, because the last part of the walk had views of the huge lake we would walk (or hopefully paddle!) across tomorrow. We managed to arrive slightly before sunset, so we tried to wash our clothes, and the bravest among us swam in the lake!

**Katiffik → Canoe Centre Sunny and warm changing to cloudy 24.08.19**

Today it also took us 3 hours to prepare but this time we had breakfast. It was a very warm day and the packs didn't feel as heavy. Last night we had read in the hut's guestbook that some people had to abandon their canoes because of the bad weather. With the help of Carla's orienteering we found them and tried to paddle. It was very scary in the beginning as they felt a bit wobbly and tipping over would be catastrophic because our clothes and sleeping bags would never dry. As the day was so sunny and warm it was very pleasant to paddle, and I had a nice conversation with Esme. However, it started being very windy in the afternoon and our boat was constantly going off-course. We arrived at the hut with frozen feet but we had an entire room there to ourselves. That night we played cards until late.

**Canoe Centre → Ikkattooq Sunny****25.08.19**

Waking up in a hut was warm and dry! The landscape was almost Martian as we walked though boggy terrain that was recently burned. Immy had a concerning cough, probably because of how cold our feet were yesterday. Our lunch spot had a very nice view of a lake and the mountains behind it. After the lunch we arrived to the first uphill of the trip. This was hard on all of us because of the weight, even though it was a meagre 300m. When we arrived at the hut we found Ester, the Hungarian woman, sleeping. She was obviously woken up and gave us some of her food, even though she had half of our daily calories! The view from the hut was fantastic, as through the window we could see a small lake and the reddish sky. We sang songs from Les Mis and played cards before going to bed.

**Ikkattooq → Lake after Eqalugaarniarfik Sunny****26.08.19**

Today we broke our own record and we were ready in 2 hours and 5 minutes! Today we had to do the infamous river crossing. We started with a steep descend to a plateau that reminded Carla of the Nida plateau in Crete last year. When we reached the river we stripped to our underwear, strapped our boots to our bags and we were ready. The water was only up to our knees, but we could feel the power of the water. We decided to skip the next hut and to camp halfway through the next stage. It took us a lot of time to find an appropriate camping spot, and by then the sun was setting, so we braced ourselves for a cold dinner! After dinner we talked with Carla about how being the leader changes your experience of the expedition. There is no time to feel tired, less time to enjoy the small things, but it is very rewarding to see your plans come to life.

**Lake after Eqalugaarniarfik → Innajuattoq Cloudy****27.08.19**

We woke up at 6am next to the lake, and Carla had already cooked breakfast for us. The hike was giving all of us Dartmoor flashbacks. Yesterday we had decided that we would do a half day today and we were glad we did, as we were all tired after the 11 kilometres. We met many interesting people in that hut. A British man that was using a respirator, two American women that were working in the Munroe station in Antarctica and a Czech photographer with his friend. We compared daily calories with all of them, and we decided that we had too much food with us! However, all of us felt hungry at the end of the day. The day went fast, we tried to swim in the lake and we talked about our plans for Ilulissat. After we went to bed, at around 11 there was a big commotion in the hut. A lot of people came, and they seemed to make a lot of noise. After about an hour I decided to investigate, and it turns out that it was a local school from Sisimiut of about 30 people. As there was no space they were sleeping on the floor. I immediately felt embarrassed as we had spread our stuff in the empty beds. I could imagine how angry I would be, if we went to the Imperial College hut in Snowdonia and found that some Greenlanders had spread their gear on the beds. However, they seemed really chill about it.

**Innajuattoq → Nerumaq Sunny changing to light rain****28.08.19**

The day started at 6:30. The hike was gentle, and we had good views of the cabin and the lake. We started the descent and the view became even better, as we were waist high in yellow hedges and we could see the entire valley. We arrived early (at 13:00) at the cabin and after two hours the school arrived as well. We had a long conversation with their teacher, and it was very interesting to see that he and the community could see that effects of the climate change in their everyday life. The permafrost was disappearing, and in some places like Sisimiut it has gone forever and the lakes become shallower every year. He also taught us how to fish, so Immy and Carla took some poles and went to the river. We stayed there for about 2 hours, but unfortunately the fish were used to hungry hikers, so we went back to the hut hungry. Before going to bed I was thinking about how special the members of this expedition were: Carla that planned this trip perfectly, Immy, who is fearless and always cheers us up and the multitalented Esme who I can have very long conversations with. That night Carla woke up at around 23:00 and come back to the hut screaming... We could see the northern lights! We wore all our layers, took our sleeping bags and went outside. Initially there was a thin line bisecting the sky, like a cloud on a starry night. I was about to complain to Carla, when the light show started. The lights

were never still, always moving, some like ripples on a skirt, some like the fluids in numerical simulations. We stayed out for about two hours amazed by the sight but very cold, as there was frost developing outside my sleeping bag.

**Nerumaq → Kangerluarsuk Tulleq Sud      Very Sunny, Very hot**  
**29.08.19**

Today we woke up in a terrific mood and we did the litter pick up. There was a huge amount of toilet paper thrown all around the trail. The hike was gentle, the weather very hot, and we were hiking in shorts. When we stopped for lunch next the river, Carla went to swim, Immy tried to fish with her hat and I had a siesta. The rest of the walk was along a sandy bank, and it almost reminded us of Crete. We were very tired when we reached the hut, but Immy and Carla started cleaning the perimeter and Esme and I went to fetch water from a near by stream. That stream had a very good view, and we had another one of our long and personal conversations. After dinner we had yoga with Carla and did Sudoku with Immy. We slept early but were woken up by more visitors in the hut. Unfortunately, the sky was still bright, so I waited by drinking tea and doing Sudoku. This night the lights were much more intense, but they lasted for a smaller amount of time.

**Kangerluarsuk Tulleq Sud → Sisimut      Windy, cold**  
**30.08.19**

We started hiking with very good views of the fjord below. We could see the peak we wanted to ascend (it was only 700m high) and it looked steep and ominous. Going up it was challenging with the packs, and the footing was loose at some points. However, we were compensated by the views, as we could see Sisimut, the second largest Greenlandic city and the end of the trail, the fjord we had just come from and some snowy mountains to the south. To reach Sisimut we had to walk through the place where the sled dogs were kept and it was scary as they were looking very hungry. We were wondering in Sisimut quite a lot because the recommended hostel was at the other side of the town. However, it was fully booked so we walked back the way we came to the big and expensive hotel. Esme remembered seeing a billboard for another hostel, so we tried calling them. Five minutes later a Danish lady and her toddler arrived in an SUV to pick us up. They took us to a very nice Airbnb with great views of the sun setting. After our celebration picture with the sunset we had showers (the first after 11 days!) and washed our clothes. We had a big omelette for dinner and slept well.

**Sisimut → Ferry      Sunny, warm**  
**31.08.19**

We woke up well rested and started communicating with the outside world, now that we had wifi. We skyped with our loved ones, read the news (about Hong-Kong and Brexit) and replied to our emails. After a while we felt trapped and had to leave the AirBnB. Immy and Esme went to the meat market, which was a very upsetting and they were selling skinned baby seals. There isn't much to do in Sisimut, as there is no high street, no central square and apart from the homes built on the seafront, all other houses are Soviet style blocks. We quickly started feeling trapped in Sisimiut too and wanted to begin the next step of our adventure in Ilulissat. That night we took the ferry, which was gently rocking but still enough to make some of us upset.

**Ferry → Ilulissat      Sunny**  
**1.09.19**

Waking up in the ship's cabin was not so bad, and as we were reaching Ilulissat we started to see more and more Icebergs. There were also whales swimming and playing at the mouth of the fjord! When we left the ferry we booked a boat tour for the last day and went to do the coastal walk next to the fjord. The fjord was full of ice and from afar it simply looked like a solid mass and not many small icebergs. Initially we felt that we didn't deserve this view, because we hadn't walked far to get to it. We found a good camping spot, but there were no lakes nearby. A Danish man who was jogging commended our choice of spot, and suggested that we get water from the icebergs! There was a small bay underneath us which seemed safe and we went there to paddle, get water and take photos. At one point an iceberg calved and the water started retreating. We got scared as this is usually a sign of a tsunami, but luckily nothing happened. That night we bivvied with Carla watching the sunset paint the icebergs red. Sadly it became cloudy so we didn't see the lights.

### **Ilulissat → Aaliafarick**

**Overcast, light rain**

**2.09.19**

Today we woke up the latest we ever had, at 9. We lazily had breakfast and prepared and we were ready at 12. On our way we met a cool Greenlander, Lassi who was born in Disko island. He seemed keen to party with us when we were going to return to Ilulissat. He gave us a lot of advice and a large fish! The rest of the hike was challenging, with a lot of elevation and the terrain changed from the typical Greenlandic vegetation to rocky. When we reached the place where the camping spot was on the map, we found a lot of trash and the remnants of a fire. It started raining and we kept walking to find a more appropriate spot. We choose the first flat ground we found, which was far from the water source (the iceberg beach!) but that was compensated for by being next to the ice-fjord. The morale was getting low, but cooking and eating the fish made everyone happy. Carla used the gloves from the first aid kit to prepare it and we simply fried it on the lids of our pots. It is very hard to describe how good it tasted, and my mouth waters just by thinking about this fish, 3 months later. I was very surprised by this because we had no salt and no oil.

### **Around Aaliafarick**

**Sunny, very windy**

**3.09.19**

Immy decided to stay near the tents today and the rest of us went on a small day hike in order to appreciate the view. We were simply walking without a plan, we just stopped where we thought the view was good. It was very cloudy and misty when we woke up, but it started to get clearer. We could finally see the vast white expanse of the icecap from our first stop. The wind was really strong, so it was hard to stay at the same place for a large amount of time, nevertheless we enjoyed the views and took a lot of photos. Our next stop was on top of a hill, so we had panoramic views of the icecap, the fjord and the sea. When we returned to the camp, we all went for a swim. The water was so cold that only Carla and Esme managed to swim, I simply dipped my toes and they are still very cold. We had a long conversation about how to split the money we got from the old centralians trust, as they didn't tell us how to divide it. We bivvied under the stars, but the night was so warm and pleasant that I fell asleep and didn't see any lights! The rain woke me up at 4am and I went back inside the tent.

### **Aaliafarick → UNESCO site**

**Rain changing to optimistic overcast**

**4.09.19**

When we woke up the rain was very heavy. After a rainy breakfast we started the hike back to a viewing spot near Ilulissat. Wearing waterproofs was not a great idea, because

they kept me dry from the rain, but my clothes became wet from my sweat. The hike didn't have as many views of the icebergs, and the ground was flat arctic tundra. When we reached the beach we had first gotten water from, the rain had stopped and the clouds were forming amazing shadows on the sea. We pitched our tents near the UNESCO heritage site boundary and had dinner on the wooden tables that were there. After dinner we walked to a headland where we wanted to enjoy the icebergs for a last time. The sun was setting so the ice had a red taint. As we were getting ready to leave, we heard a hissing sound and saw a fountain springing from the sea. We couldn't believe that there were whales so close to the land! We stayed at the headland for another hour watching the whales play. This was the perfect end for our last hiking day.

### UNESCO site → Ilulissat

Sunny

5.09.19

I woke up early and went back to the headland. I was feeling very grateful for being part of this expedition and doing it with such a special group of people. Greenland is one of the last unspoilt places in the world, where you can freely camp anywhere you want. This is what I was thinking when I saw an iceberg that had a lot of blood on it. Since we have established that Greenland is a wild place, there was a non-zero chance that the blood was from a kill of a polar bear. Needless to say, I didn't stay long on that headland! Carla and Immy went back to town as they had to prepare for the rest of their journey. Esme and I went for a lazy circular walk, sad that this was going to be the last time we saw the icebergs. We had breakfast on the fabled beach and reluctantly headed back to the town. We dined on Musk-ox burger and reminisced about our favourite and funniest moments of the expedition. Just before sunset we took a boat cruise around the mouth of the Ice fjord. It was cold but totally worth it as we saw more than 20 whales. We returned to Ilulissat as the sun was setting. After having cous-cous we headed for a big night out! We found Lassi at the bar where he said he was going to be. We met the other guides and impressed them with our hiking adventures. They invited us back to their hostel where we had more conversations with them. We were all very tired and we headed back at around 2, lucky to get a last glimpse of the northern lights. Esme and I are departing tomorrow, so who knows when we are going to see them again...

*Imogen's account:*

### Qeqertarsuaq, Disko Island

6.09.19

We said goodbye to Yorgos and Esme and then got 2 hours sleep, getting up at 5am for our ferry. Saw a man waiting for his taxi to the airport for a 7am flight which was moved to 9am, the flight the others were getting on. They didn't trust that the flight had actually been moved until later. Ferry was very bumpy, but I still managed to sleep for an extra 2 hrs. When we arrived it looked very different to the rest of Greenland, with large volcanic rock features. And it was freezing cold. We met a girl called Anne who invited us to her guesthouse. She had two other friends coming but their ferry had been cancelled. We had coffee and Carla added chocolate for mocha. I thought I saw a whale, so we went out to explore. Turns out the whale was a rock. We went to find the lighthouse suggested by some French people who owned the guest house, but we found the lighthouse on a separate island. So, we sat there and drew the view of the island. Carla describes her drawing as abstract. I say she is now the child on the trip (I coined this name by Carla at the beginning of the trip). Anne collected crowberries on the way up and then on the way back we went to the supermarket and got a frankfurter and Anne bought pancake

ingredients. When we went back, she made us pancakes with creme fraiche and crowberry jam. We played monopoly cards, drank tea and watched as Carla ate three plain tortillas. We were living a life of luxury. Carla left her antlers at Anne's with the aim to pick them up later and then we then walked to the waterfall with Anne and setup the tents. The plan was to walk up Lassie's recommended route and pitch on the peak of the mountain the next day. We were too tired to cook food so ate snacks, the sacrifice for a night out in Ilulissat bar with the locals the day before.

### **Qeqertarsuaq, Disko Island**

**7.09.19**

We got up at 8am having 11hrs sleep, packed the tents and started the hike. We got to the large columnated basalt rocks and climbed through a hole in the wall. It was incredible with so much to explore and so many photos were taken. No whales were seen on the island yet, however. The French couple said all the whales went to Ilulissat in anticipation of bad weather. It started raining heavily and it was windy. Carla soaked her solar charger and I was worried about soaking the two books I had bought the day before. One on Greenlandic culture and another of a Greenlandic children's legend Kassussak, with such a shocking narrative I had to buy it. Carla as a geologist was very excited about the rock formations and took many videos in hopes that Marc Sutton will provide her with a 3d model, she argues he requested. But expects that he will send her said models. Carla tells me the rocks form columns perpendicular to the surface of the lava flow. We met a woman collecting a plant that smelt a bit of celery but is a leaf. She said it is called Kvern and is used to make a very popular Greenlandic dried herb and tea when brewed. We decided to abandon the hike due to the now very foggy and wet weather, we could also see snow starting to form at the top. We set up our tents again by the river.

Our plan was to whale watch, check the cafe and supermarket times and see if there was any information on the ferries, to see if our ferries back to Ilulissat too were cancelled, or if the time had been moved etc. We met a woman in the museum the day before, so went back to ask her, however it was Sunday, so the museum was closed. We went to the whale viewing spot and Carla slipped three times on the slippery rocks -she must not be as agile as I am. We soon realised when we reached the whale viewing spot, that the lighthouse we saw the day before was in fact not a lighthouse and the real lighthouse was a very underwhelming 5m stack of concrete which looked more like a letterbox. We ate the rest of Carla's cheese, tortilla and baby bells and Carla finished off the rest of her peanut butter.

No whales. In our wet saddened states, we removed ourselves from the bench and sat in the whale viewing hut and looked through the trip photos and videos. When we eventually left, we stepped outside to see a magnificent rainbow bending right across the iceberg. We joked that the whales were probably at the end of the it like the pot of gold. We were lucky enough to see this exact iceberg carve the day before, the biggest calving we'd seen yet, it sounded like thunder. Even though it was a long way out to sea, the wave it made was still able to break on the shore.

### **Qeqertarsuaq, Disko Island**

**8.09.19**

The day started early. As we had been unsuccessful in climbing the peak in the last two days, we decided to make a final attempt in the few hours before my ferry arrived at 2pm. We had a theory that the weather starts to get bad around midday and so far, the theory was correct. It was 8am and the sky was clear, so was the peak, as far as we could see anyway. The peak had many false peaks, I kept thinking we'd reached the top and then the mountain would open up to reveal more mountain rising upwards in the distance. I was tired, but Carla trooped on. Unfortunately, the clouds decided to fall around us when we were approaching the top and as Carla had walked on slightly ahead, as to not get too cold when I had a break, we then became separated. The rocks were starting to get covered in snow and ice over. I could not see the way forward on the route any longer and it was already 11:30, so I had to make the decision to exit the mountain, so that I could pack away camp in time for the ferry. Half an hour after I reached camp, I heard a panicked voice call my name, it was Carla. As I was unable to tell her I'd left the mountain, she was worried that something had happened to me and was on her way to the local police station. After the situation had been diffused, I gave Carla the remainder of my snacks for the rest of her trip and we headed off back to the town. We parted ways then and Carla went to collect her antler she left at Anne's and I headed to the ferry, which thankfully, was not cancelled or delayed. The journey back was strange as this was the first time, I'd been on my own in almost a month. It was an odd feeling to realise that both Esme and Yorgos were already home. Despite this, it gave me a chance to reflect and take in the scenery for the last time when approaching Ilulissat, before taking the plane back home the next morning. I was very much looking forward to reading the book on Greenlandic culture I bought and the classic legend of 'Kassussuk', a mildly entertaining tale by the opening in the first few pages. A now greatly recommended read.

## **5. Itinerary and logistics**

### **Travel**

#### Out:

19<sup>th</sup> August: Flight to Copenhagen, and overnight layover in Copenhagen.

20<sup>th</sup> August: Morning flight to Kangerlussuaq.

21<sup>st</sup> August: World of Greenland ice sheet excursion to get to the ice sheet (and request to be left there!) - <https://aac.gl/greenland-ice-sheet-point-660>. This is the easiest way to get up to the ice sheet, where we will start the hike.

#### Internal:

31<sup>st</sup> August: Ferry from the end of the Arctic Circle Trail in Sisimiut to Ilulissat. The ferry leaves Sisimiut once a week on Saturdays at 21h00 and arrives in Ilulissat at 13h00 on Sundays.

6<sup>th</sup> September: Disko Line ferry from Ilulissat to Qeqertarsuaq on Disko Island

9<sup>th</sup> September: Disko Line ferry from Qeqertarsuaq to Ilulissat

#### Back:

10<sup>th</sup> September: Flight back to London via layover in Reykjavik\*

\*note the expedition members left Greenland on different days. Yorgos and Esme left on 6<sup>th</sup> September and didn't come to Disko Island; Imogen left on 9<sup>th</sup> September and got an earlier ferry back from Qeqertarsuaq.

It is not uncommon for Greenland Air flights to be delayed due to the weather conditions, so we ensured to give ourselves a few days buffer to allow for the possibility of flight delays when flying from Ilulissat back to Kangerlussuaq.

## Route

For ease, we have split our expedition into three phases:

- Phase one was the main expedition focus and is the Arctic Circle Trail with the addition of two extra days to hike from the ice cap to the beginning of the trail.
- Phase two involves hiking around the Ilulissat Icefjord UNESCO World Heritage Site
- Phase three involves hiking around Qeqertarsuaq on Disko Island – a remote volcanic island the size of Crete that is off the west coast of Greenland

### Phase 1: The Ice Cap to Sisimiut

We flew into Greenland's international airport in Kangerlussuaq, a small settlement which was originally a US air base. The standard Arctic Circle Trail route is actually only 160km and starts in Kangerlussuaq, but we decided to opt for a slightly longer route so we can start on the ice sheet. This is one of very few places in the world that the ice cap is accessible without a helicopter, so we couldn't miss the opportunity to visit it and walk all the way down from the ice sheet to the sea! This is a fairly common alternative that is well documented and is covered in the Cicerone guidebook which we bought. The trail then follows the line of latitude Westward to Sisimiut on the west coast – the 2<sup>nd</sup> largest City in Greenland with a population of just over 5500.

Overview map:



Starting on the ice sheet doesn't require the need for crampons or safety ropes, as the nearby glaciers relieve the pressure that normally causes crevasses and the ice is plenty grippy enough for shoes to suffice (even the tourist excursions that visit the ice sheet do not provide crampons to customers).

We started hiking on Wednesday 21<sup>st</sup> August, which ensured that we arrived in Sisimiut in time for the weekly ferry up to Ilulissat on Saturday 31<sup>st</sup> August.

Planned itinerary (as written before the expedition):

Day 1:

From 'Point 660' on the ice sheet it is a short ~12km hike down the 4WD route to Russell glacier, where we plan to camp for the first night (because camping next to a glacier will be awesome!). The hike down is a stony, sandy, dusty dirt road. The gradients are mostly gentle with the exception of a few short steep stretches. The day involves just 100m of ascent and 300m of descent.

Day 2:

From Russell Glacier we will continue to follow the 4WD route down 25km back to Kangerlussuaq. We can rent lockers in Kangerlussuaq airport to store my food supplies for the rest of the trip so we don't need to carry all the expedition food up to the ice sheet. We

will spend the night in Kangerlussuaq. The day involves 240m of ascent and 700m of descent.

There is also an option today to hike up Sugar Loaf – a steep sided hill 16km into the day's hike. If we decide to add this on to our day we need to take a track doubling back sharply on the left as we pass Sugar Loaf.

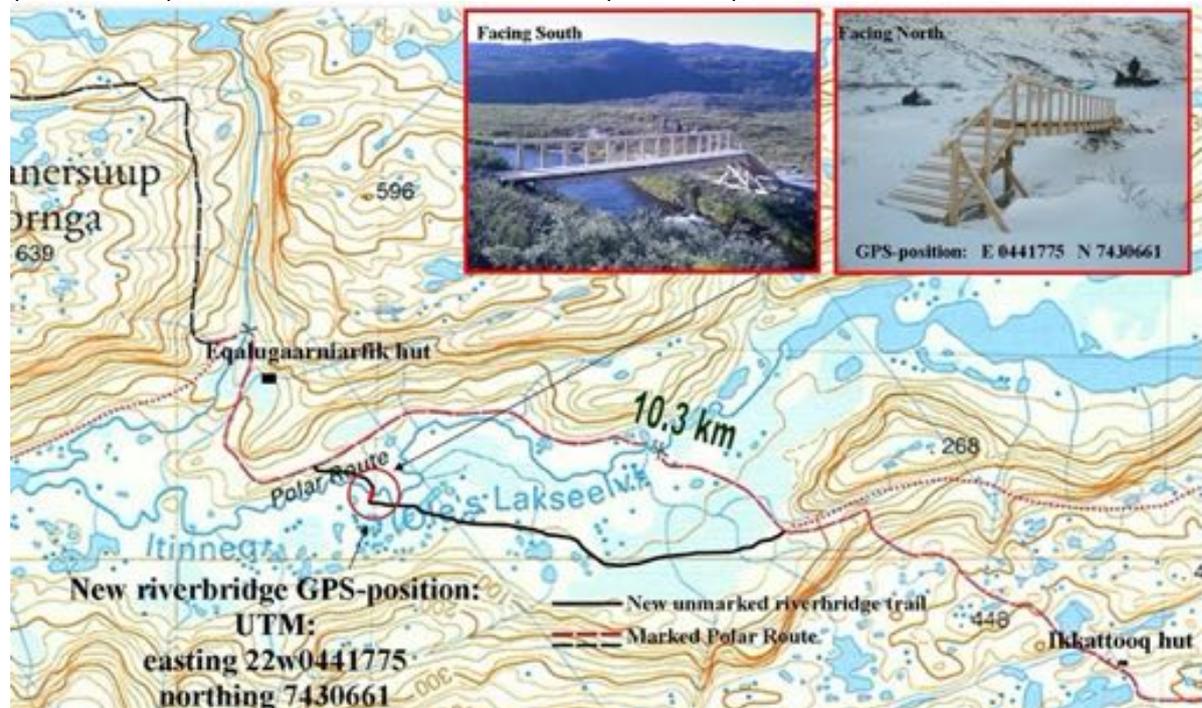
Day 3:

Although the trail starts 10 miles down the road from Kangerlussuaq, we will walk the extra 10 miles to save on taxi costs. From here, how far we will hike each day will depend on how we are feeling. We will have enough food for eleven days starting on day 3 (days 1+2 were extra days with separate food) - this is conservative, as we predict the trail will take us 9 days from Kangerlussuaq to Sisimiut but allows for emergency rations and potential forced rest days in the case of adverse weather.

From the Katiffik hut (the second hut we will encounter on the trail – see hut map below), it is sometimes possible to canoe part of the route down Amitsorsuaq lake, parallel with the trail. However, it depends if we get lucky and the canoe happens to be at the hut when we get there and if the canoe is in good enough condition. Some hikers have documented that the canoes have been badly damaged in recent years, so this is probably unlikely.

There is also at least one river crossing on the route (depending on the volume of meltwater at the time of my hike – the Ittineq River is the deepest and strongest), which can sometimes be waist deep – although not usually in September. See the river crossing sub-section for our plan on how we will tackle river crossings. If the water level is particularly high and fast flowing at Ittineq river, there is a bridge that was built in 2008 which is about 3km away from the trail down the valley which we can use instead to cross the river.

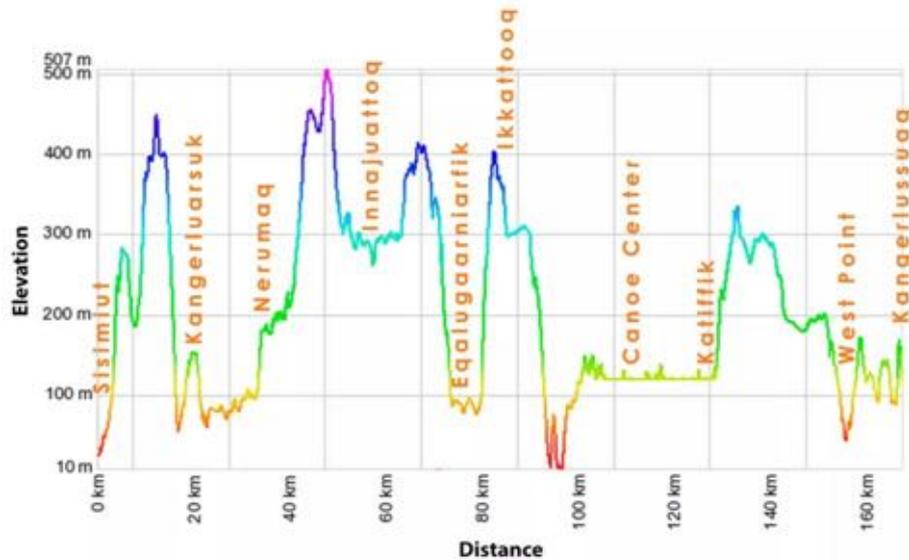
Map showing the alternative route in order to cross the Ittineq River at the new footbridge (black route), rather than the traditional route (red route):



Google Earth imagery showing the locations of the huts:



Elevation profile: (West to East)



We are also planning to summit Nasaasaaq, a 784m peak located South-East of the city of Sisimiut. We will do this after completing the trail directly from Sisimiut. It is a 16km route there and back and involves 800m of ascent and descent. The route starts off as an easy track and is then followed by some steep and stony paths, where a few lengths of fixed rope are in place near the summit where the rock is particularly steep. The mountain boasts beautiful views over the alpine peaks to the South, the sea and the Sisimiut.



Photo of the city of Sisimiut at the trail terminus, with Mt. Nasaasaaq in the background:



*Phase 2: Ilulissat Icefjord*

Upon arrival in Sisimiut, we got the 21:00 ferry on Saturday 31<sup>st</sup> August up the West coast to Ilulissat, arriving at 14:00 on Sunday 1<sup>st</sup> September. The Ilulissat Icefjord is an UNESCO World Heritage Site encompassing over 4000 square kilometres on the west coast of Greenland, 250 kilometres north of the Arctic Circle. The site itself consists of the edge of the Greenlandic ice sheet, the Jakobshavn Glacier and the sea mouth in Disko Bay into which the glacier calves. It was awarded World Heritage Site status in 2004 as an area of extreme beauty and of international importance for the Earth sciences and understanding climate change.



We spent 5 days in the Ilulissat area camping along the icefjord. The map below of local hiking routes was readily available in Ilulissat (and we were able to download gpx files) and we also bought the 1:100,000 map for the Ilulissat area (the same style as the maps we will bought for the ACT) so we had the flexibility to explore a bit further. There was not so much information available online about hiking further out than the trails below, but we discussed routes with Dr Lorraine Craig, who has visited the area many times, prior to the expedition.

Map of Ilulissat and the surrounding area with some local hiking routes marked out:



### Phase 3: Disko Island

Carla and Imogen took the 07:00 Disko Line ferry to Qeqertarsuaq on Disko Island on 6<sup>th</sup> September (unfortunately Yorgos and Esme needed to be back in London so flew back from Ilulissat the same day). We spent a long weekend doing day hikes along local hiking trails and camping near the town. There was even less information online about hiking on Disko Island, but again we discussed our routes with Lorraine and bought the 1:100,000 map for the Qeqertarsuaq area.

### Shelter

There are 9 basic wooden huts that can be found along the Arctic Circle Trail that we could use in bad weather, but we intended to camp every night and only use the huts if absolutely necessary (in reality we did end up using them more than intended – they were a nice luxury!) In theory the hike can be done by hiking from hut to hut each day without a tent and would take 10 days from Kangerlussuaq to Sisimiut (not from the ice cap), but this is not encouraged, and it is important to at least have a tent as an emergency shelter.

Table of distances and elevation gain/loss between the huts (huts highlighted in bold):

From – To	Distance	Ascent	Descent
Ice Cap to Kangerlussuaq	37km (23 miles)	340m (1115 ft.)	1000m (3280 ft.)
Kangerlussuaq to <b>Hundesø</b>	20km (12 ½ miles)	505m (1655 ft.)	335m (1100 ft.)
Hundesø to <b>Katiffik</b>	20km (12 ½ miles)	370m (1215 ft.)	420m (1380 ft.)
Katiffik to <b>Canoe Center</b>	20km (12 ½ miles)	150m (490 ft.)	150m (490 ft.)
Canoe Center to <b>Ikkattooq</b>	22km (13 ½ miles)	550m (1805 ft.)	350m (1150 ft.)
Ikkattooq to <b>Eqalugaarniarfik</b>	11km (6 ½ miles)	260m (855 ft.)	450m (1475 ft.)
Eqalugaarniarfik to <b>Innajuattoq</b>	19km (12 miles)	550m (1805 ft.)	380m (1245 ft.)
Innajuattoq to <b>Nerumaq</b>	16km (10 miles)	250m (820 ft.)	400m (1310 ft.)
Nerumaq to <b>Kangerluarsuk Tulleq</b>	17km (10 ½ miles)	180m (590 ft.)	205m (675 ft.)

Kangerluarsuk Tulleq to Sisimiut	20km (12 ½ miles)	500m (1640 ft.)	625m (2050 ft.)
----------------------------------	-------------------	-----------------	-----------------

Summary map of hut locations:



One of the wooden huts on the trail:



During phase 2 and 3 in Ilulissat and Qeqertarsuaq, we camped. There were no huts accessible to hikers in either of these areas.

## Food

Apart from at Kangerlussuaq, where the trail begins, there is nowhere to get food on the Arctic Circle Trail, so we had to carry all our supplies with us. For the extra 40km hike from the ice sheet at the beginning we needed just 2 days' worth of food, because we were able to leave the rest of our supplies at the campsite in Kangerlussuaq (you can also store kit in lockers at Kangerlussuaq airport for a small charge per day).

To be on the safe side we carried 3 days' worth of food for this section. We gave ourselves 9 days to complete the rest of the route (160km) and so carried 11 days' worth of food (to include emergency rations and to account for the possibility of having to wait out bad weather in one of the huts for a day or two if a storm hits). We predicted that the route (minus the extra 2 days at the start) would take 9 days, and this was very achievable compared to what other people have done previously.

We brought 2 stoves and bought fuel in Kangerlussuaq. We ate dehydrated meals and supplemented them with high calorie snacks such as nut mix and protein bars. We originally hoped to be able to make the dehydrated meals ourselves but ended up buying a mixture of Expedition Foods dehydrated meals for some meals (Expedition Foods sponsored our

expedition) and a range of cous cous, instant mash, mug a shots and cup a soups for some meals.

There were also three types of wild arctic berries which can commonly be found throughout the trail, all of which were safe to eat.

During phase 2 and 3, we were able to resupply in Sisimiut and Ilulissat. Since even the daytime temperatures were only as high as a standard fridge, we treated ourselves to fresher and heavier food during this part of the trip – including fruit and cheese!

### **Water**

The only water that wasn't safe to drink on the trail was the glacial meltwater from Russell Glacier, because of the fine-grained silt that can wreak havoc in your intestines. Water from lakes and other streams/rivers is all safe to drink and did not need to be filtered. It was also plentiful in supply, and we didn't need to be carrying more than a litre at a time. The only exception to this was the 16km hike along the road from Kangerlussuaq airport to the start of the trail (we actually ended up getting a taxi anyway!) – there are no clean water sources along this road, so we would have had to bring water from Kangerlussuaq.

### **Weather/climate/terrain**

The Arctic Circle Trail often experiences some of the best weather in Greenland, although rain and snow are still not uncommon. In late August we expected cool single-figure temperatures during the day and temperatures down to -6°C overnight. There is also often overnight snow in the mountains. The weather can change quickly – going from blue skies as far as the eye can see, to snowfall in as little as 30 minutes.

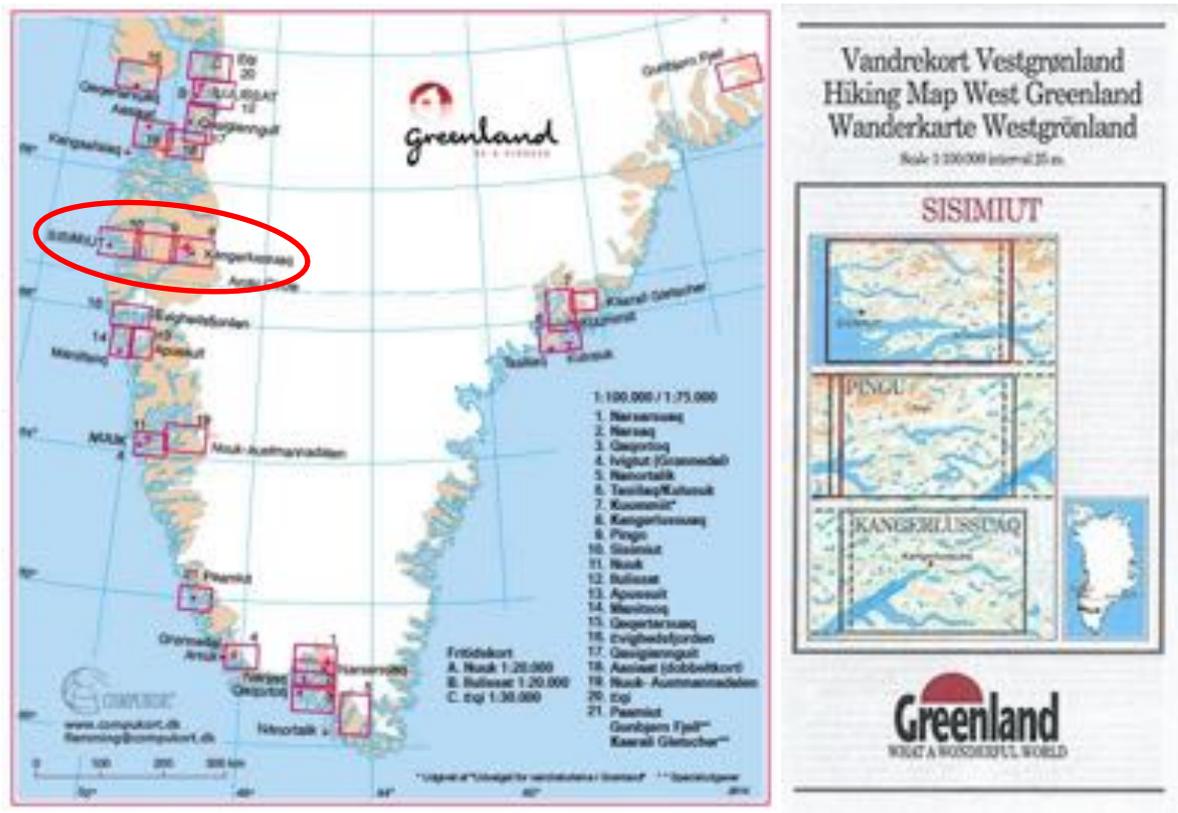
We were exceptionally lucky with the weather! Other than a lot of drizzle for the first 2-3 days and a downpour over lunch on day 3, we actually experienced clear blue skies throughout the rest of the trail and in Ilulissat with temperatures also slightly higher than we had envisaged (although still not “warm” by any stretch of the imagination!) In Qeqertarsuaq we were aware that the weather could be more changeable – and it was! We experienced a lot of rain and the nearby peaks were shrouded in mist during most of our stay there.

### **Maps**

There are 3 topographical maps that cover the Arctic Circle Trail – Kangerlussuaq, Pingo and Sisimiut and two further maps for the Ilulissat and Qeqertarsuaq areas. They are 1:100,000 scale maps costing £16.95 each (total £84.75). They can be bought at the Polar Lodge in Kangerlussuaq upon arrival, but we bought them online from the Stanfords website (they can also be bought from Harvey maps) to ensure we were able to get them and so we could study them beforehand. We also pre-downloaded maps on all of our phones as a back-up on both the Outdoor Active app and Maps.me. The gpx files for the Arctic Circle Trail we downloaded from the Cicerone website and I was able to create the routes for Ilulissat and Qeqertarsuaq prior to leaving. Between us we carried 5 power banks and a solar charger, so if we did end up having to rely on our phones, we would have had plenty of charge. We also bought the Cicerone guidebook which has a good description of the route for each day as well as general advice for people hiking the trail.

The navigation is straightforward and the many lakes made orientating ourselves really easy. The trail was also marked with cairns, although often spread quite far apart, and by red paint. Nonetheless, map and compass are essential because there are lots of hunting trails which sometimes go in completely different directions to the trail.

The maps we will be using for the Arctic Circle Trail:



## Wildlife

Reindeer are commonly sighted on the trail and although the juvenile reindeer might be inquisitive, most will stay well away from hikers. Musk ox, although less common, are sometimes seen by hikers, but it is unsafe to approach them, as they might charge. Arctic foxes and hares are also commonly encountered in the area. Gerfalcons and peregrine falcons can sometimes be seen circling the skies.

We were exceptionally lucky to be able to see all the wildlife listed above just on the first day enroute to the icecap!

## Environmental Impact

We will make sure to minimise our impact on the environment by adhering to the “take only photographs, leave only footprints” phrase. We will carry all our waste with us and dispose of it in Sisimiut at the end of the trail and make sure we bury human waste away from water sources.

In addition, as a way to give something back to the local community and make the trail cleaner for future hikers, we participated in the Arctic Circle Trail clean up – a project founded by the owner of the campsite in Kangerlussuaq. We pledged to remove all the litter from 2 sections of the trail: between Neruruaq and the lake near Kangerluarsek Tulleq and from there to and including the hut at Kangerluarsek Tulleq Syd.

## 6. Preparation/training

Since only Carla and Georgios knew each other before undertaking this expedition, on the May bank holiday weekend we went hiking in the South Downs National Park to get to know each other and also to test out the kit we had bought for the expedition so far. This proved very useful, as we realised some of our equipment was not in good enough condition.

We estimated that our packs would weigh around 20kg at the start of the trail with all of our food and kit for the trip, getting lighter as we eat the food and use the fuel. This turned out to be a massive underestimate! Our packs weighed closer to 30kg at the start!

In addition to this group training, we all had various individual plans for our summers to ensure that we are best prepared to hike the Arctic Circle Trail at the end of August:

Carla:

“I will be spending 2 weeks hiking in Bosnia and Montenegro in July, followed by a week of hiking in the French Alps at the beginning of August. This will give me a chance to get used to carrying a backpack of similar weight to what I will be carrying in Greenland and also to further test out my equipment and wear in my new boots.”

Esme:

“For the fitness and strength elements, I will be upholding my normal sports timetable through summer term which includes training 8-12 times a week for rowing and triathlon, as well as cycling from London to Paris for charity. I will reduce this in the lead up to the expedition to reduce the chance of injuries and so my body is in the best possible state. For more specific preparation to carry the load and refresh my hiking awareness, I am planning several short expeditions to Snowdonia, the Peak District etc.”

Imogen:

“During the beginning of the Summer holiday, I will be taking on a solo cycle tour across the South Coast. This is undoubtedly great preparation for strengthening my body all round for the expedition.

The week before the expedition I will be completing conservation work in Scotland which also involves touring the mountains across various routes with rangers. The week before that I will be hiking across various parts of Slovenia.

Alongside these trips, I will continue my improving my fitness by keeping up with regular jogs, swimming, attending PT training with the OTC and various other individual sports I do to fill my spare time.”

Georgios:

“Although I have a busy summer with an internship, I will continue with the weekly lead climbing in Westway. This will be good for muscle growth and strengthening for carrying the backpack. There are many Outdoors trips planned from sport climbing in the UK, where I will be the driver and help with the logistics.

The training I wished I had done in my previous expeditions is running with the full weight of the backpack. Thus, I will start using backpack during my weekly runs.”

## 7. **Budget**

### **Grants:**

The Imperial College Exploration Board awarded the expedition £3000 split equally amongst the team members.

The Old Centralians Trust awarded the expedition £1500 which was split as follows:  
Imogen - £625

Esme - £625  
Yorgos - £250

Carla applied for several grants with her original solo expedition proposal and was awarded £1000, which breaks down as follows:

Get Exploring Trust - £300

Jeremy Willson Charitable Trust - £400

Lord Mayors 800th Anniversary awards trust – £200

Alpkit Foundation - £100

### **Outgoing costs:**

To give those considering undertaking similar expeditions an idea of the costs involved we have included an example summary of the major costs of the expedition to one individual. The costs varied depending on what equipment each individual already owned and which parts of the expedition they took part in. The costs outlined below are for Esme who had previously visited the Arctic but had old kit some of which needed replacing. She took part in phase 1 and 2 of the expedition (the Arctic Circle Trail and Ilulisat but not Disko Island). This is intended to provide a ball park figure: costs to individuals varied up to a maximum of approximately £3500.

<b>Individual expenses</b>	
Iceberg boat tour	£87.00
Taxi to airport in Ilulisat	£7.00
Ice sheet excursion	£75.15
Flights (including baggage)	£978.00
Ferry from Sismit to Ilullisat	£175.00
Dehydrated meals	£190.00
Powders	£30.00
Snacks and lunches	£40.00
Hostel in Sisimuit	£21.00
Hostel in Ilulisat	£42.44
Meal out in Ilulisat	£30.00
Hostel in Copenhagen	£21.84
Meal in Copenhagen	£10.00
Additional food whilst away	£80.00
<i>Sub total</i>	<i>£1,787.43</i>
<b>Group expenses</b>	
Toilet trowel	£22.85
Sim card for satellite phone	£123.00
Paper maps	£67.80
Fuel	£20.00
<i>Sub total per person</i>	<i>£58.41</i>
<b>Individual equipment purchase costs</b>	
Tent	£110.00
Bivi bag	£60.00
Waterproof trousers	£50.00
Hiking trousers	£30.00
Raincoat	£110.00
Dry bags	£20.00
Spork and bowl	£6.00

Lighters	£3.00
Socks	£10.00
Rucksack	£200.00
<i>Sub total</i>	<i>£599.00</i>
<b>Total cost</b>	
<b>Total</b>	<b>£2,444.84</b>

## 8. Safety

Dates of expedition: 19/08/2019-10/09/2019

Location of expedition: West Greenland (Kangerlussuaq to Sisimiut; Ilulissat; Qeqertarsuaq)

### Contact

Expedition team members contact details: (note no phone signal whilst on trail)

Carla: 07762070962

Esme: 07925252191

Georgios: 07999277143

Emergency contact:

**Emergency services** – +299 701322 (although no phone signal on trail)

We hope to borrow the Imperial College exploration board's **satellite phone** for the hike, which we can use in emergency situations. If this is not possible, we will need to borrow or invest in a satellite phone, as it is an important asset whilst hiking on such a remote trail.

We will give details of our trip to our families, along with a predicted finish date, so they can raise the alarm if we don't make contact when expected.

We will also write a note in each of the visitor books in the huts along the route, so there is a dated record of our whereabouts should something go wrong.

### Medical

We will be carrying a first aid kit to self-treat minor injuries and illnesses.

**Nearest medical centres:** There is a small clinic in Kangerlussuaq (trailhead) where minor injuries/illnesses can be treated but more serious medical emergencies require evacuation by air.

There is a larger medical health centre in Sisimiut (trail terminus), but serious medical emergencies will still require evacuation by air to the hospital in Nuuk.

**Nearest hospital:** Queen Ingrid's Hospital, Nuuk, Greenland (the largest hospital in Greenland). Only accessible by plane. There are up to four flights a day to Nuuk from Kangerlussuaq where the trail starts and four a week from Sisimiut where the trail ends.  
Phone number: 34 40 00

### River Crossing Safety

When crossing rivers, the river will be crossed at the safest point. This is where the water is shallowest and slowest, usually at the widest point. The river will be scouted out downstream to check for hazards such as waterfalls, rapids, or fallen trees. The map will be checked for forks or braids which split the river, causing the volume of water to be reduced. Boots will

be removed and replaced with water shoes to improve footing, provide protection and preventing sodden boots which could cause blisters.

The hip-belt and sternum strap of the rucksack **MUST** be unbuckled to easily get rid of the rucksack if needed.

Trekking poles or sticks are useful to provide balance and feel the ground ahead for footing and for gauging water depth. When crossing the river, it should be done at a slight angle downstream but facing upstream. We will lean into the current and step sideways.

If the crossing is particularly difficult, we will form a tripod with everyone facing in, or alternatively use a rope tied to a tree. The strongest member is to take the rope across, and the last member is to untie the rope and bring it back across.

### **Risk Assessment**

Date risk assessment undertaken: 06/04/2019

\*1-4, with 1 being low and 4 being high

\*\*Likelihood multiplied by Severity, 1-16, with 1 being low and 16 being high

<b>Hazard</b>	<b>Potential consequence</b>	<b>Likelihood *</b>	<b>Severity *</b>	<b>Risk score **</b>	<b>Precautions taken to reduce risk</b>
The cold	Hypothermia/ cold weather injuries	2	3	6	Change out of wet clothes. Layer up when stopped. Keep hydrated and fed. Be overly cautious about layering up early, before we get cold. We will also have emergency blankets.
River crossing	Especially at the end of the summer when there's more melt run off from the ice sheet/glacier, rivers can become fast flowing and deep. Slips can propel you into rocks downstream causing serious injury.	2	3	6	See river crossing safety section.
Blisters	Uncomfortable and could get	2	1	2	Wear our boots in before

	infected if they get popped				starting the trail. Bring zinc oxide tape for hotspots.
Getting lost	Fatigue; extra unnecessary mileage up to the extreme being running out of water/food -> dehydration.	1	2	2	Although the trail is mostly marked by red paint and cairns, we should make sure we always know where we are on the maps. It's easier to prevent getting lost than getting unlost! We will be taking paper maps, a compass, downloading digital maps and be following the Cicerone guidebook.
Falling rock	Injury/death	1	4	4	Don't linger/rest/camp under unstable rock faces. Where possible, walk further away from the cliff face.
Moving glaciers	Injury/death	1	4	4	Don't walk near the glacier terminus or walk on the glacier (the ice sheet is safe to walk on, but the glaciers are not)
Musk oxen	Can charge at you without warning and cause serious injury	1	3	3	Give them a wide berth and never approach or pass them from above, as they find this threatening.

Silt flats	Act as quicksand and can be hard to distinguish from harder sand until walked across	2	3	6	Do not venture out into the river beds.
Silty glacier meltwater	Consuming the fine-grained silt can wreak havoc in your intestines and clog up water filters.	2	2	4	Don't drink the glacial meltwater. Water from other streams and lakes is safe.
Edge of the ice sheet	In the summer huge calving events can happen at anytime, dropping tonnes of ice accompanied by bursts of near-freezing water.	1	4	4	Keep a safe distance from the edge of the ice sheet.
Mosquitoes and black flies	Common in summer months, but most are killed off by frost by September. Itchy bites.	2	1	3	Bring bug repellent and/or a mosquito net.
Unpredictable weather/ snow storms – in September the risk of snow storms is higher than in June-Aug (more popular months to hike the trail)	Cold injury	2	3	6	Pitch the tents early to wait out snow storms instead of pushing on through and waiting until we're already cold and in need of shelter.
Polar bears	Serious injury/ death	1 – extremely unlikely (although there have been a couple of unexpected sightings near	4	4	Keep as far away as possible. If the bear has not seen us, do not draw attention to ourselves. If

		Kangerlussuaq recently)			it has seen us, speak loudly and act as if it should be scared of us. Do not act as prey by running away.
Dehydration	Dizziness, weakness, diarrhoea, vomiting	2	3	6	There are frequent water sources throughout the route, but we need to make sure we check when the next lake/stream is each time we pass one so we can fill up our bottles accordingly.
Poor nutrition/ running out of food	Fatigue, exhaustion	2	2	4	We will be preparing our food into daily rations, which we will ensure have enough calories (around 3000/day). We will also be carrying enough food for 2 extra days (from Kangerlussuaq) – i.e. we will carry 11 days of food from Kangerlussuaq to Sisimiut and we expect this section to take us 9 days.
Slips, trips and falls	Cuts, bruises, other minor musculoskeletal injuries	2	1	2	We will be taking a first aid kit with us and we will be able to deal with minor injuries.

Heavy backpack	Back/shoulder pain	3	1	3	Make sure our packs are well fitted and the weight is evenly spread.
Tent breakage	Lack of shelter, making me reliant on the huts which are a days' walk apart from each other.	1	2	2	Appropriate repair kit will be carried to fix minor tent breakages. We will check the tent before departure to ensure functionality. We will be carrying a bivvy bag.

### **Incident response plan**

#### **1. Initial response**

- a. Don't panic
- b. Are we safe? If not, how can we get ourselves into a safer environment?
- c. Assess the situation – what do we need to achieve? What are our immediate assets and limitations? What condition is the casualty(s) in?

#### **2. Formulate a plan and act on it.**

- a. Where is the nearest hut? Are we able to get the casualty there?
- b. If not, can we send one person to get help and one person stay with the casualty?
- c. Get the casualty out of the elements if possible – sleeping bag/ bivvy bag/ tent.
- d. Apply first aid.
- e. Does the casualty need to be evacuated? If so, use the satellite phone to make emergency call and explain the situation.

#### **3. Continue to assess the situation as it develops**

- a. Is the casualty's condition changing?
- b. How can we adapt our plan?