Patagonia Ski Touring – July/August 2026

Expedition Report

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Abstract

This report documents a backcountry ski touring expedition undertaken from 19th July to 7th August 2026 in the northern Patagonian Andes of Argentina and Chile. Based initially in Bariloche, the trip combined road-based logistics with guided and self-guided day tours, resort-accessed slackcountry and an overnight hut tour. Over 10 days on skis, the team covered over 120 km and ascended over 15,000 m of elevation, with highlights including a white-out ascent and outstanding descent of Volcán Sollipulli, touring through snow-laden araucaria forest at Los Arenales, and an overnight tour to Refugio Piltriquitrón that produced arguably the best descent of the trip.

A key feature of the expedition was a series of reroutes forced by persistent storm cycles, high winds and elevated avalanche danger. Stormy conditions around Chapelco prompted an early pivot across the Andes to Corralco in Chile, and an avalanche rating of 4 out of 5 later ruled out the planned five-day traverse from Refugio Frey to Refugio Jakob, which was replaced by a series of day tours and an overnight tour around Bariloche and El Bolsón. The report outlines both the technical and experiential aspects of the trip, including avalanche preparedness, illness management, decision-making under uncertainty and working with local guides. It concludes with key takeaways and recommendations for future teams operating in similar storm-driven, wind-affected environments.



Figure (1) *Summit of Cerro López above the clouds*

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1: Introduction

1.1 Aims and Objectives

We are four Imperial College London students, spanning undergraduate and doctoral study, brought together through Imperial College Snowsports by a shared enthusiasm for backcountry skiing and mountain travel. Patagonia offered a combination of deep cultural roots, a strong guiding tradition and largely undocumented winter backcountry that is difficult to find anywhere else, making it the ideal setting for an expedition that would push our touring skills beyond what we had experienced in Europe and North America.

The expedition was originally planned as a 21-day journey through three mountain zones of the Argentinian Lake District: Cerro Chapelco, Cerro Bayo and Cerro Catedral. Each offered a mix of resort-accessed touring and more remote objectives, building up to a five-day ski mountaineering traverse from Refugio Frey to Refugio Jakob near Bariloche, guided by AAGM-certified mountain guide Jeremías Palavecino. As described in Section 4, the weather had other plans, and much of the expedition became an exercise in adapting objectives to conditions.

Our objectives were as follows:

- Develop safe and effective techniques for multi-day ski touring in complex terrain
- Produce a short ski film documenting the expedition's journey and challenges
- Explore new ski terrain and experience Patagonia's unique mountain culture
- Conduct an exploratory ascent of Cerro Inviares within the remote Rucaco Valley

How far each of these was achieved is discussed in Section 8.

1.2 Location

Patagonia is defined by dramatic granite spires, vast glacial valleys and pristine alpine lakes. In winter the Andes are blanketed in snow, and the region's consistent snowfall, varied terrain and relative lack of crowds make it a great place for backcountry exploration. Weather is dominated by westerly and north-westerly winds from the Pacific, and alternates between stormy periods that deposit and redistribute snow under extreme winds and calmer high pressure windows. This 'feast or famine' cycle shaped almost every decision we made.

Although the expedition was planned entirely within Argentina, conditions led us to operate across two countries and four main areas.

1.2.1 Bariloche and Cerro Catedral

San Carlos de Bariloche sits on the shore of Lago Nahuel Huapi and served as both the start and end point of the expedition. Cerro Catedral (2,388 m), South America's largest ski area, offers lift-assisted access to sidecountry terrain such as La Laguna [1] and is the gateway to the Refugio Frey and Refugio Jakob hut network. Nearby Cerro López and Cerro Goye provided excellent day touring from the town.

1.2.2 San Martín de los Andes and Cerro Chapelco

Chapelco (1,980 m) was planned as our acclimatisation zone, offering treeline skiing and low-angle backcountry objectives such as Cerro Colorado [2]. A forecast of storms and high avalanche danger

meant that we were only able to use this area for avalanche transceiver practice and a hike before moving on.

1.2.3 Malalcahuello, Corralco and the Araucanía (Chile)

Crossing the Andes into Chile's Araucanía region, we based ourselves in Malalcahuello near the Corralco ski resort. With the help of local guide Javier, we also toured at Los Arenales, a former ski area surrounded by araucaria forest, and on Volcán Sollipulli near Melipeuco.

1.2.4 El Bolsón and Cerro Piltriquitrón

South of Bariloche, the town of El Bolsón gives access to Refugio Piltriquitrón, which became the base for our overnight tour after the Frey to Jakob traverse was ruled out.

1.3 Expedition Members and Their Experience

The core group consisted of four Imperial College London students with combined experience in ski touring, off-piste skiing, ski instruction, alpinism and expedition planning, supported by two local guides.

1.3.1 Joseph Essigman

Role: Expedition Lead

Age: 23

Academic Background: 4th Year MEng Aeronautical Engineering

Relevant Experience:

- Familiar with the use of avalanche safety equipment
- Completed multiple day-touring trips in Canada, including the DOA Couloir in Whistler
- Extensive off-piste skiing experience across varied terrain and snow conditions

Relevant Positions:

- Freestyle Captain (23/24), Treasurer (24/25) and President (25/26) of Imperial College Snowsports



Figure (1.1) *Joseph Essigman on the expedition*

1.3.2 Solomon Kurzman

Role: Logistics & Finance

Age: 22

Academic Background: 4th Year MEng Design Engineering

Relevant Experience:

- 11-day ski touring expedition in the Arctic Circle, Norway
- Multiple backcountry day trips in the Purcell Mountains whilst living there for 6 months
- CSIA Level 1 Certified Ski Instructor
- Previously a member of BC Alpine Ski Association
- British Backcountry Ski Touring Training Course

Relevant Positions:

- Ski Instructor at Panorama Mountain Resort (2021–22)
- Race Coach at Windermere Valley Ski Club (2021–22)
- Treasurer (23/24), President (24/25) and Trip Secretary (25/26) of Imperial College Snowsports



Figure (1.2) *Solomon Kurzman on the expedition*

1.3.3 Francesca Rowley

Role: Medical & Safety

Age: 23

Academic Background: 1st Year PhD Chemical Engineering; MEng Chemical Engineering (2025)

Relevant Experience:

- 3-day ski touring training programme in Alagna, Italy
- 20+ days skiing with off-piste guides in challenging terrain across Europe, including the Couloir de Pramain in La Plagne
- Familiar with avalanche safety, rescue and use of transceivers

Relevant Positions:

- Race Captain of Imperial College Snowsports (2023–24, 2025–26)
- Secretary of Imperial College Snowsports (2024–25)



Figure (1.3) *Francesca Rowley on the expedition*

1.3.4 Thomas Stringer

Role: Navigation & Equipment

Age: 25

Academic Background: 1st Year PhD Civil Engineering; MEng Civil Engineering (2023)

Relevant Experience:

- 40+ days of backcountry touring in complex avalanche terrain, primarily in the North and South Selkirks, including unguided descents of the Grizzly Couloir, STS Couloir and 7 Steps of Paradise
- Avalanche Skills Training (AST) Levels 1 and 2
- Emergency First Aid and CPR-C
- Experienced climber and alpinist, including the JCMT Chamonix course, two expeditions to the Bugaboos and unguided ascents of the Dent du Géant, Mt. Sir Donald and Mt. Rainier

Relevant Positions:

- CSIA Level 2 Certified Ski Instructor, with two years instructing at Revelstoke Mountain Resort
- Treasurer of Imperial College Snowsports (2021–23)
- Vice Chair for Individual Sports, Imperial College Union (2022–23)



Figure (1.4) *Thomas Stringer on the expedition*

1.3.5 Supplementary Team

For safety and local knowledge, the team worked with two guides. Jeremías Palavecino, an AAGM-certified ski and mountain guide based year-round in Bariloche, guided our first tour on Cerro López and the majority of our touring in the final week. In Chile, we were guided for two days by Javier Rojas, a local ski guide based near Corralco, whose knowledge of the area was invaluable.

Honourable mentions also go to the farm dog who joined us all the way to the summit of Cerro Goye, and to Michigan, the resident cat at Refugio Piltriquitrón (Figure 1.5).







Figure (1.5) *From left to right: Jeremías, Javier, farm dog and Michigan*

2: Support

2.1 Expedition Grants

We would like to offer a huge thank you to our sources of grant funding, who made this expedition possible:

- Imperial College Exploration Board
- Imperial College Old Centralians' Trust
- The Jeremy Willson Charitable Trust
- The Young Explorers' Trust
- The Alpine Ski Club
- The Neil Mackenzie Trust

2.2 Expedition Supporters

Our expedition planning was greatly enriched by the guidance and support of several people, whose expertise was invaluable in shaping our approach.

2.2.1 Jeremías Palavecino

Jeremías is a certified ski and mountain guide accredited by the Asociación Argentina de Guías de Montaña (AAGM). Based year-round in Bariloche, he has extensive experience guiding ski touring and mountaineering expeditions throughout Patagonia, and runs backcountry safety and skills workshops through Backcountry Patagonia and Guías del Sur [3]. Jeremías was a wealth of information during planning, advising on routes, ski areas and equipment. When conditions ruled out the Frey to Jakob traverse, his flexibility and local knowledge allowed us to rebuild the final week around a series of day tours and an overnight trip to Refugio Piltriquitrón.

2.2.2 Javier Rojas

Javier is a local ski guide in the Araucanía region of Chile. We met him on our first evening near Corralco to plan tours, and he guided us for two days at Los Arenales and on Volcán Sollipulli. His recommendations, from termas to touring routes, and his confirmation of our own decision not to tour in the storm, were a real highlight of our time in Chile. We are also very grateful to his parents for hosting us in Melipeuco.

2.2.3 Harry Hayley

Harry is a senior account manager at NUCO Travel, and Joe, Fran and Solly have worked with him for the past three years organising Imperial College Snowsports trips for up to 500 students. His knowledge of the ski industry and of planning robust itineraries was beyond helpful.

2.2.4 Cameron McFadden

Cameron is a Level 1 Ski Guide with the Canadian Ski Guide Association, working primarily for cat-skiing operations in snow science, avalanche control and client guiding. Tom knows Cameron from his time in Canada, where the two were frequent mountain partners, and his endorsement of the team's approach to risk management was much appreciated.

3: Logistics

3.1 Itinerary

The expedition was planned around the five-day Frey to Jakob traverse, placed at the end of the trip because local guides suggested August offers more stable weather and snow conditions, and to give the team time to refine technical skills beforehand. The provisional itinerary from our proposal is shown in Table 3.1.

Date	Day	Location	Planned Activity
21 Jul	1	London → Santiago	International travel
22 Jul	2	Puerto Montt → Chapelco	Drive to San Martín de los Andes
23–25 Jul	3–5	Chapelco	Resort skiing, acclimatisation and backcountry touring
26 Jul	6	Chapelco → Cerro Bayo	Transfer; rest and logistics
27–29 Jul	7–9	Cerro Bayo	Resort skiing and backcountry touring
30 Jul	10	Cerro Bayo → Bariloche	Transfer; rest and planning
31 Jul	11	Cerro Catedral	Resort skiing and local orientation
1 Aug	12	Bariloche	Equipment prep and final logistics
2–5 Aug	13–16	Refugio Frey → Refugio Jakob	Five-day hut-to-hut traverse
6–7 Aug	17–18	Bariloche	Return from Refugio Jakob; buffer day
8–10 Aug	19–21	Puerto Montt → Santiago → London	Return travel

Table (3.1) Planned expedition itinerary

In practice, storm cycles and avalanche danger meant the itinerary was rewritten several times. Chapelco and Cerro Bayo were replaced by a week in Chile around Corralco, and the Frey to Jakob traverse was replaced by day tours from Bariloche and an overnight tour from El Bolsón. The itinerary that was actually followed is shown in Table 3.2.

Date	Location	Activity
18 Jul	London → Bariloche	International travel to Bariloche
19 Jul	Bariloche	Kit preparation and orientation
20 Jul	Cerro López	Guided day tour to the summit
21 Jul	Bariloche → San Martín de los Andes	Logistics and transfer
22 Jul	Cerro Colorado	Hike, transceiver practice and drone practice
23 Jul	San Martín → Malalcahuello (Chile)	Border crossing; termas near Pucón
24 Jul	Corralco	Resort skiing in storm conditions
25–26 Jul	Malalcahuello	Recovery and admin days
27 Jul	Malalcahuello	Hike to Salto de la Princesa (wind hold)
28 Jul	Los Arenales	Guided touring with Javier; transfer to Melipeuco
29 Jul	Volcán Sollipulli	Guided tour with Javier; transfer towards the border
30 Jul	Chile → Bariloche	Border crossing; car drop-off and planning
31 Jul	Bariloche	Traverse cancelled; replanning with Jeremías

Date	Location	Activity
1 Aug	Cerro Catedral	Resort skiing
2 Aug	Cerro Goye	Day tour
3 Aug	Cerro López	Tree touring
4 Aug	Cerro Catedral	Guided slackcountry (La Laguna)
5–6 Aug	Refugio Piltriquitrón	Overnight hut tour from El Bolsón
7 Aug	Bariloche	Rest day
8 Aug	Bariloche → London	Return travel to London

Table (3.2) Itinerary followed during the expedition

3.2 Travel

3.2.1 International Travel

We flew London to Bariloche and extra baggage allowance was required for ski bags, avalanche equipment and winter clothing. UK passport holders can enter both Argentina and Chile visa-free for tourist stays of up to 90 days, so no visas were required.

3.2.2 Domestic Travel and Border Crossings

A hire car gave us the flexibility to chase conditions, and proved essential when we decided to leave Argentina for Chile at short notice. Snow chains were collected in Bariloche before the first long drive, and heavy snow on the roads to Cerro Colorado and beyond called for slow, careful driving. The hire car was fitted with standard tyres rather than the winter tyres recommended by Jeremías, which we would not repeat (see Section 8).

We crossed the Argentina–Chile border twice: from San Martín de los Andes towards Pucón on 23rd July, and back from the Melipeuco area to Bariloche on 30th July. Both crossings required early starts and allowance for delays, and customs officers on the first crossing took a keen interest in the snow knife in Tom's bag. Future teams should keep specialist equipment easy to present and explain at the border.

Access to Cerro López relied on a 4x4 transfer up a steep off-road track. On our second visit, fresh snow meant the driver had to stop several times to shovel the track clear, so time for transfers should be built generously into tour plans. The original hire car was returned in Bariloche on 30th July and a second car was hired from 6th August for the final days.

3.3 Currency

Argentina uses the Argentine peso (ARS) and Chile the Chilean peso (CLP). Following our planning, each team member carried around 100,000 ARS (approximately £50) and US$150 in cash for emergencies and cash-only situations, with cards used for most other payments. Cash was more essential than we initially thought, especially in the refugios.

3.3.1 Language

Spanish is the official language of both Argentina and Chile. Working with Spanish-speaking local guides made communication on the mountain straightforward, and translation apps were

downloaded on all phones for other situations. We made an effort to learn local terms, from termas to cazuela, which helped us engage with the people and places we visited.

3.4 Insurance

3.4.1 BMC Alpine and Ski Insurance

Insurance for all team members was secured through the British Mountaineering Council's Alpine and Ski Worldwide plan [4], which covers off-piste skiing and ski touring and provides £10,000,000 of emergency medical cover and £100,000 of search, rescue and recovery cover, including repatriation and emergency evacuation as required for entry to Argentina.

3.4.2 Healthcare

The UK GHIC does not provide cover in Argentina or Chile, so all medical costs abroad would fall under our travel insurance. When illness spread through the team in Chile, antibiotics were sourced locally at a pharmacy.

3.5 Fitness and Training

3.5.1 Avalanche and Touring Training

Before departure, Tom already held Avalanche Skills Training Level 2 (Avalanche Canada) and Solly had completed British Backcountry's Introductory Ski Touring course in the Cairngorms. Joe, Solly and Fran completed a one-day avalanche skills course with Guides Montagne Tignes during the Imperial College Snowsports trip.

Training continued throughout the expedition. Tom led an avalanche transceiver burial session at Cerro Colorado on 22nd July (Figure 3.1), and every tour gave the less experienced members practice in kick turns and transitions, which improved dramatically between our first and last days.

3.5.2 Fitness Plan

All team members maintained a base level of fitness through regular sport, supplemented by Ortovox's touring-focused training plan [5], which targets endurance and leg and core strength for efficient uphill travel.



Figure (3.1) *Avalanche transceiver practice at Cerro Colorado*

3.6 Environmental and Social Impact Assessment

3.6.1 Leave No Trace

Throughout the expedition we followed Leave No Trace principles. All waste was carried out of the mountains and disposed of appropriately, wildlife was observed at a respectful distance, and hut protocols and shared resources such as water and heating were respected.

3.6.2 Supporting Local Communities

We aimed to leave a positive economic footprint by hiring local guides, eating at locally run establishments such as the restaurant at the foot of the disused chairlift at Los Arenales, staying in refugios and buying food from local shops. Our time at Los Arenales was a reminder of the social context of mountain tourism: the resort closed because it sat on native land and was not owned by local people, and the area is now used only for Chilean army snow training and by local guides. We were grateful to be able to visit with Javier.

3.6.3 Carbon Offsetting and Travel Emissions

Our proposal estimated emissions of 2.6 tonnes CO_2e from flights and around 519 km of driving, and we committed to purchasing 3 tonnes of Eagle Ski Club carbon credits from the Cochabamba Project at £18 per tonne (£54) [6].

3.7 Documentation

3.7.1 Geographic Data and Route Recording

The Patagonian Lake District is poorly documented for backcountry skiing, so recording our routes was an important objective. Tours were logged using watches and phones and documented on Strava.

3.7.2 Visual Documentation

We used a multi-layered approach to visual documentation:

- **Social media:** A content plan was drawn up on the first day and the expedition's Instagram page was developed throughout the trip (handle: patagonia_exped).
- **Aerial footage:** A drone was flown in suitable conditions, with dedicated practice at Cerro Colorado. Highlights included footage from Cerro López and the winter landscape of Cerro Goye. High winds limited flying on many days.
- **Photography and video:** GoPro and phone footage captured both the skiing and the human side of the expedition for the short film.

3.8 Food & Water

Food was bought from supermarkets in Bariloche and the towns we passed through, with shared meals cooked wherever we stayed. Eating out was also a highlight of the cultural side of the trip, from medialunas with dulce de leche in Bariloche and trout from the lakes around San Martín, to cazuela de vacuno, navegado and sopaipillas at Los Arenales. Refugios provided empanadas, hut pizzas and plenty of yerba mate, and the trip finished in style with Argentinian steak and Malbec.

4: Expedition Log

4.1 Summary and Achievements

Across 10 days on skis in Argentina and Chile, we covered over 120 km and climbed over 15,000 m of elevation. These numbers only hint at the breadth of the expedition, which demanded constant adaptation, tested our skillsets and delivered some unforgettable touring.

Several days stood out, particularly the 29th of July, when we pushed through a white-out to the top of Volcán Sollipulli for an incredible descent, and the 5th of August, when the descent from the summit of Cerro Piltriquitrón delivered gorgeous dry powder all the way back to the refugio. Touring among snow-covered araucaria trees at Los Arenales (Figure 4.1), and our first summit above the clouds on Cerro López, were also highlights.

The defining theme of the expedition was the weather. A storm cycle that followed us across the Andes, high winds that closed lifts and even whole resorts, and an avalanche rating of 4 out of 5 in the final week meant that our original plans for Chapelco, Cerro Bayo and the Frey to Jakob traverse were all abandoned. Each decision involved real-time risk assessment, input from local guides and dynamic replanning. Far from a setback, this became a valuable lesson in expedition flexibility and judgement, and gave us a far broader experience of Patagonian skiing than the original plan would have done.



Figure (4.1) *Touring through the araucaria forest at Los Arenales*

4.2 Timeline and Trip Diary

Activities undertaken and a general diary of the trip, from the accounts of Francesca Rowley.

19th July: Our first day was spent in Bariloche, giving us time to get our bearings around the town before heading into the mountains. After a first taste of the local cuisine with a breakfast of medialunas and dulce de leche, the focus turned to equipment preparation: familiarising ourselves with our kit, cutting skins and tuning skis. Time was also set aside for documentation, drawing up a content plan and starting work on the expedition's Instagram page. Later in the day we ventured into town to watch the World Cup final, before packing our bags and loading the car ahead of our first tour with Jeremías the following day.



Figure (4.2) *Medialunas for breakfast in Bariloche*

20th July: Our first day of skiing! A day tour up Cerro López started with a 7am departure, strapping our skis to the roof of a Land Rover 4x4 for a 30 minute ascent up a gnarly off-road track. This was followed by a 25 minute hike up to Refugio López with skis and boots on our backs. A glorious sunrise greeted us at the hut, where we dropped our hiking boots and spare layers before a further 40 minute bootpack up to the skin line. From there skins went on, and we toured for 2.5 hours to the summit of Cerro López, which offered a spectacular view above the clouds.



Figure (4.3) *Sunrise above the clouds from Refugio López*

The level of touring varied across the team, with the less experienced members producing some questionable kick turns, and progress was often one step forward and three steps back before the technique began to click. We descended the main face, stopped for a quick bite to eat and then headed back up again, capturing some great drone footage along the way. Returning to the refugio meant crossing back over the ridge, which required a couple of transitions and proved excellent practice. After sharing some yerba mate at the hut, we continued down to the lower Refugio Roca Negra, where

the 4x4 collected us. Copious amounts of empanadas for dinner, before swiftly passing out from exhaustion!



Figure (4.4) *Ascent of the main face of Cerro López*

21st July: Largely a day of organisation. We collected snow chains in Bariloche before packing up the car for the next leg of the journey. Some difficult decisions had to be made about where to head next, as stormy weather and high avalanche danger were forecast around San Martín de los Andes and Chapelco for the following week or so.

This put a spanner in the works, as Chapelco was intended to be our acclimatisation zone. After weighing up the options, we made the decision to cut our stay in San Martín short and cross into Chile to chase the good snow, settling on Corralco as our new primary destination. With this in mind, we set off for two nights in San Martín in a very cramped car, with hopes of great snow on the horizon.

22nd July: Conditions were not good enough to ski at Chapelco, with the storm and high winds ruling out a day on the mountain. Instead, we drove to Cerro Colorado, one of the low-angle objectives identified in our proposal, for a hike and some avalanche transceiver practice. Heavy snow on the roads called for careful driving, particularly on hire car tyres. The transceiver burials went well, with Tom leading the session, and were followed by some drone flying practice in support of our film objective. We finished the day with a dinner of local trout from the lakes, which was delicious.



Figure (4.5) *Local trout after a long day of burial practice*

23rd July: An early start to make the border crossing into Chile, where customs officers were a little puzzled by the snow knife in Tom's bag... Once across the border, we were greeted by an abundance of termas, the hot spring baths found around Pucón. These were much needed, as Tom and Fran were feeling severely under the weather, and the steam proved a great help for their chesty coughs. From there we continued on to Malalcahuello, our base for Corralco.



Figure (4.6) *Hunting for the termas near Pucón*

24th July: It appeared the storm had followed us over to this side of the Andes, but that did not stop us heading to Corralco for a day of resort skiing and further familiarisation with our equipment. Although only two chairlifts were open, they gave access to some powdery off-piste terrain where we practised deep snow turns on what was a very cold and windy day.

In the evening we met with local ski guide Javier to plan tours for the following days. He was extremely knowledgeable, and it was valuable to speak with a local, who confirmed that ski touring that day would have been unsafe. This was a reassuring check on our own decision-making.



Figure (4.7) *In the wind at Corralco*

25th July: By now the team was feeling somewhat worse for wear, with the chesty coughs still developing, so we decided to take a recovery day and catch up on some admin in the cabin. The weather was also poor, with even the windy volcano of Corralco closed for the day. In the afternoon we did venture into the lower mountains, following a recommendation from Javier for more termas.

26th July: Another recovery day, used to book the final arrangements for our return to Argentina. We also managed to source some antibiotics, which was a welcome relief.

27th July: The original plan was to head to Corralco and tour up through the resort, however the winds remained very high and posed a serious safety risk. Instead, we hiked to the Salto de la Princesa waterfall, saving us from cabin fever (and hopefully easing our actual fevers too!).



Figure (4.8) *Salto de la Princesa*

28th July: The first of our two days with Javier, spent at Los Arenales. This former ski resort closed because it sat on native land and was not owned by local people, and is now used only for Chilean army snow training and by local guides such as Javier. It proved to be a place of real natural beauty, with araucaria trees, better known as monkey puzzles, covered in layers of snow. The touring route was relatively shallow and short, allowing us to complete four laps, with the descent opening out into a powdery bowl.



Figure (4.9) *Snow-covered araucaria trees and the ascent at Los Arenales*

At the bottom of the disused chairlift was a locally run restaurant serving a mouthwatering beef soup known as cazuela de vacuno, a hot wine called navegado and sopaipillas dipped in a chilli salsa, all

much needed after a day of touring in heavy snowfall. That evening we drove 2.5 hours south to Melipeuco to stay the night with Javier's parents ahead of our second day.

29th July: Our second day with Javier took us to Volcán Sollipulli. The ascent covered 1,000 m of vertical over 3.5 hours and was made pretty rough by near white-out conditions and a lack of visibility. A few fellow hikers were seen on the way up, but otherwise we had the volcano to ourselves. The gruelling ascent paid off, however, as the descent was incredible.





Figure (4.10) *White-out on the ascent and the descent of Volcán Sollipulli*

After a hard day's work, the car was packed up once again and we drove down to stay near the border crossing back into Argentina, where the evening mainly consisted of drying clothes and gear.

30th July: An early border crossing back into Argentina, though the long drive meant most of the day was still spent in the car. We arrived in Bariloche at 3pm, dropped off the hire car, planned for the final week and headed to the shops to pick up essentials.

31st July: Due to unfavourable conditions once again, the five-day traverse from Refugio Frey to Refugio Jakob was called off. The avalanche danger was rated 4 out of 5, and no one had yet completed the traverse on skins this season.

This was a big blow, as the traverse was the centrepiece of the expedition and our route into the Rucaco Valley and Cerro Inviares. Working with Jeremías, we adapted the plan into a series of day tours around Bariloche, chosen to suit the conditions, with the hope of fitting in an overnight tour if a window appeared. The rest of the day was spent planning and sorting out finances.

1st August: A day of resort skiing at Cerro Catedral, South America's largest ski area, to get our legs back into it ahead of the tours with Jeremías. Most lifts were open, giving us the chance to explore some off-piste terrain and take in the scale of the bowls. Heavy snowfall meant the day finished with soggy kit but happy hearts.

2nd August: Today we headed to Cerro Goye. The day started with a 45 minute bootpack along a fairly overgrown path, which proved difficult to manoeuvre through with skis on our backs. A farm dog from the base of the mountain joined us for the day and came all the way to the summit! As the ascent began, Fran's knee grew painful, so she made the decision to stop at the bottom of one of the faces the rest of the group would be skiing down. The others continued for a further 45 minutes, climbing through the trees before emerging at the peak, while Fran captured some great drone footage of the winter wonderland before rejoining the group for the second ascent.

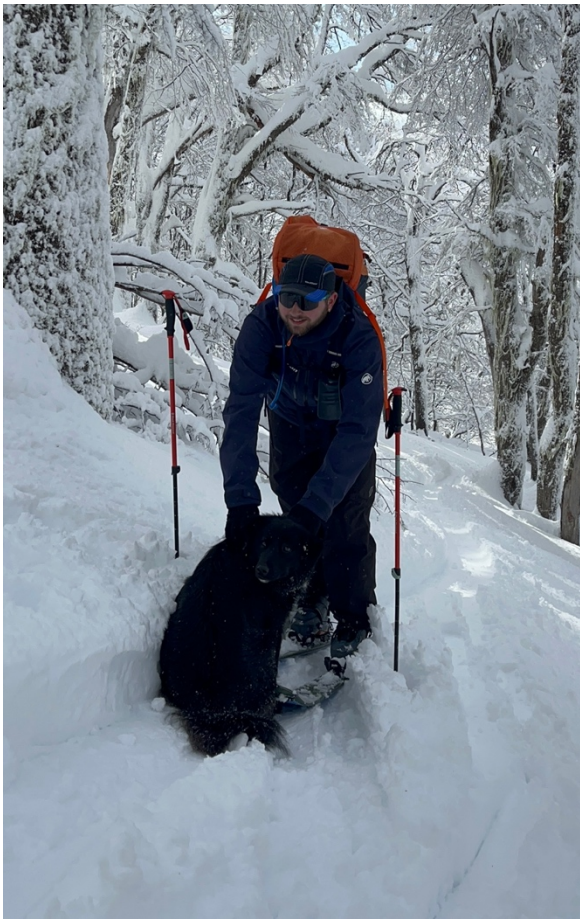


Figure (4.11) *Solly and our canine companion on Cerro Goye*

The second descent offered fantastic dry powder until the freezing line, below which the snow became pretty wet and much more difficult to turn in. We attempted to ski part of the bootpack path, but after a few collisions with trees decided it was best to descend the rest on foot.

3rd August: Following an early start, we drove back for a second attempt at Cerro López. The snow line had crept almost down to where the car was parked, a welcome surprise, although it meant the 4x4 struggled on the upper sections of the track, with the driver getting out on several occasions to shovel it clear. After about as much travel backwards as forwards, we arrived and went straight onto skins and up into the trees, as the fresh snow made the alpine too dangerous. Skinning through dense forest to a more open section, we completed three laps across the morning and early afternoon, totalling almost 1,000 m of vertical.



Figure (4.12) *Tom completing the tree laps on Cerro López*

It snowed all day, covering the skin tracks before they could be reused. The first descent was of mixed quality, with a constant worry of skis ending up under a fallen tree, but on the second and third laps we found the deep snow and enjoyed some great turns through the trees, each run finishing on the 4x4 track that had been gravel on our last visit. Rather than a fourth lap, we headed down, which proved easier said than done as thick brush blocked the way. Slow progress came to a comical end when the right track was finally found, with Solly tumbling down onto it rather than taking a more graceful approach. Back at the refugio, a hot chocolate warmed up hands and toes.

4th August: We headed to Cerro Catedral with Jeremías for some slackcountry off the top of the highest lifts. High wind speeds meant lifts were opening and closing throughout the day, so we chased whichever were running and explored wherever possible. The first ascent took us over the ridge to skier's left of the resort into La Laguna, which held some beautiful snow. After descending, a second ascent was made beneath the closed Nubes chairlift in the top bowl. We certainly made the most of our lift passes!

5th August: Still keen to fit in an overnight tour in Patagonia, we headed down to the town of El Bolsón with Jeremías to access Refugio Piltriquitrón. Arriving at the base at around 10am, we made an hour-long ascent to the refugio, most of which was bootpacking. After a quick lunch of empanadas at the hut, we set off for the summit of Cerro Piltriquitrón. Touring up a bowl with no view of civilisation really felt like another universe, and the descent from the peak was arguably the best of the trip, with

gorgeous dry powder all the way back to the refugio. The snow was so good that we climbed halfway back up for another run while the light held.



Figure (4.13) *Touring the bowl and powder turns on Cerro Piltriquitrón*

A hearty meal of hut pizzas, in the company of Michigan the hut cat, sent us to sleep early.

6th August: Unfortunately Solly and Fran were not able to ski this morning, but were treated to a great view of Jeremías, Tom and Joe's descent back down to Refugio Piltriquitrón. We then set off back down to El Bolsón ahead of the two-hour drive back up to Bariloche. Descending an icy track with 50 kg of equipment on our backs proved challenging, with a few slips on the way. Back in Bariloche we said goodbye to Jeremías and picked up a hire car for the last few days, in the hope of one more day at Cerro Catedral before travelling home.



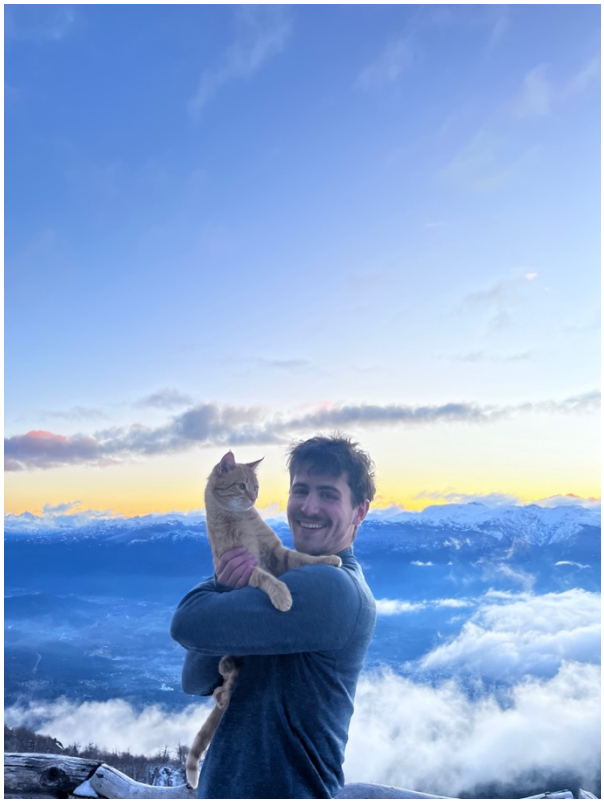


Figure (4.14) *Refugio Piltriquitrón and Joe with Michigan the hut cat*

7th August: Our last full day together! Conditions were pretty poor up at Catedral, and with most of the lifts shut and all of us exhausted after five consecutive days of touring, we decided on a relaxing last day mooching around the town. We finished off the trip in style with Argentinian steak and Malbec!

5: Equipment

5.1 Touring Equipment

5.1.1 Ski Touring Gear

Given the multi-day nature of our planned tours, we prioritised lightweight but durable equipment. Each team member used touring skis with touring bindings, climbing skins, touring boots and adjustable poles, along with ski crampons for icy ascents. Skins were cut and skis tuned in Bariloche on the first day. Each member carried a touring-specific pack with dedicated avalanche gear access and ski-carry systems, which proved essential on the many bootpacks of the trip, from the approach to Refugio López to the overgrown path up Cerro Goye. Most equipment came from personal inventories, supplemented by items borrowed from Imperial College Snowsports and the Imperial College Exploration Board.

5.1.2 Safety Gear

Each team member carried a full avalanche safety kit of a modern three-antenna transceiver, probe (minimum 2.8 m) and shovel, and helmets were worn while touring. Transceiver practice at Cerro Colorado ensured everyone was confident with their equipment before we entered more serious terrain. Tom, Joe and Solly carried iPhones with satellite messaging capability for communication beyond mobile signal, and a group first aid kit, group shelter and repair kit were carried on tours. Each person also carried a personal first aid kit, an emergency blanket, a headtorch, spare batteries and high-factor sun protection.

5.1.3 Filming Equipment

To support the film objective, we brought a drone, a GoPro and our phones. The drone proved the most valuable tool for showing the scale of the terrain, but frequent high winds limited when it could be flown, so it was worth taking every calm window available.

5.2 Other Equipment

5.2.1 Living and Hut Gear

Most nights were spent in self-catering accommodation, with one night in Refugio Piltriquitrón. For hut stays we packed hut booties, a sleeping bag and liner, earplugs and lightweight hut clothes. With storms, heavy snowfall and wet snow below the freezing line, drying kit became a daily task, and accommodation with good heating and space to hang gear made a real difference.

5.2.2 Clothing

Each team member used a layering system suited to cold, wet and windy conditions: merino or synthetic base layers, a fleece or softshell mid-layer, a lightweight insulated jacket, a hardshell jacket and salopettes, and an expedition down jacket warm enough for emergency use. Multiple pairs of gloves, including liners for the uphill, along with a neck gaiter, beanie, goggles with a spare lens and sunglasses, completed the system. Casual clothes were brought for travel and town days.

5.3 Equipment Lessons

- Hire vehicles should be booked with proper winter tyres, and snow chains are essential.
- Specialist items such as snow knives should be packed so they can be easily presented and explained at border crossings.
- Allow time and space for drying gear every evening in storm conditions.
- Spare gloves and layers are worth their weight when tours finish in wet snow below the freezing line.

A full gear list is given in Appendix C.

6: Medical

6.1 Preventative Action

Insurance was provided through the BMC (Section 3.4), and all members were at a downhill skiing ability suitable for expert terrain before departure. The risk of injury was mitigated through safe route planning, appropriate equipment fit and use, and reviewing avalanche danger and visibility before every activity, informed by daily forecasts from the Argentine avalanche information service [7] and local guides.

6.2 Incident Response

6.2.1 Minor Injury

Most minor injuries were to be treated in situ using medical equipment carried on person. Where an injury prevented self-evacuation or risked longer-lasting consequences, it would be escalated and treated as major trauma.

6.2.2 Major Trauma

In the event of major trauma, the following Trauma Response Plan would be followed. Each member carried an accessible, weatherproof copy during activity. The plan was adapted from one created by a team member on a previous touring expedition.

Step 1: Initial Response

- If the individual has been buried by an avalanche, follow avalanche search training to locate them, then continue.
- Assess the casualty and provide basic life support using the (C)ABCDE method: Catastrophic haemorrhage, Airway (with c-spine protection), Breathing, Circulation, Disability and Exposure.
- Call emergency services immediately (Argentina: 911, Chile: 131) and continue to Step 2A, 2B or 2C.

Step 2A: Self-evacuation not necessary and contact made with emergency services

- Communicate the situation, cause, timeline, interventions, current assessment, location or landmarks, ground and environmental conditions, status of others and recommendations.
- Stay on the phone, provide updates and follow the instructions of emergency services, then go to Step 3.

Step 2B: Self-evacuation necessary and casualty conscious and mobile

- Formulate a plan to move the casualty to safety, identifying key target locations such as the vehicle, main first aid kit or satellite device.
- Communicate the plan, consider the casualty's injuries and gather help using six whistle blasts or torch flashes, repeated every minute until a response is received.

Step 2C: Casualty immobile

- Do not attempt to move the casualty alone. Signal for support as above.
- Administer first aid and analgesia, prevent hypothermia with shelter, ground insulation, a foil blanket and down jacket, keep yourself warm and hydrated, and continuously monitor the casualty.

Step 3: Medical Assistance and Evacuation

- Document the incident and a clinical description (AVPU, airway, breathing, circulation, obvious injuries and interventions), establish casualty priority and communicate it to emergency services.

Step 4: Post-Incident

- Write individual event reports, document decisions with approximate times and locations, check the wellbeing of all involved, submit the Imperial College incident reporting form and hold a full debrief on return to London led by the expedition leader.

6.2.3 Pre-existing Health Conditions

Pre-existing conditions were self-managed, and members requiring personal medication packed enough for 28 days to allow for delays or loss.

6.3 Incidents During the Expedition

No major incidents occurred during the expedition. The most significant medical issue was a respiratory illness that affected Tom and Fran from around 23rd July and spread through the team, with persistent chesty coughs and fevers. This was managed with rest days on 25th and 26th July, low-intensity activity on 27th July, and antibiotics sourced locally in Chile. On 2nd August, Fran developed knee pain on the ascent of Cerro Goye and chose to stop early, rejoining the group for a shorter second lap.

The illness cost the team several potential touring days, and it highlights the value of building recovery time into an expedition itinerary and carrying a well-stocked group first aid kit, including cold and flu remedies.

6.4 Emergency Contacts

The international dialling code for the UK is +44, for Argentina +54 and for Chile +56. Key contacts are listed in Table 6.1.

Service	Telephone Number	Purpose
Argentina Emergency Services	911	For use in an emergency
Chile Emergency Services	131 Ambulance, 132 Fire, 133 Police	For use in an emergency
BMC 24 Hour Emergency Medical Assistance	+44 208 608 4254	Support in an emergency (call emergency services first)
BMC Insurance Claim Line	+44 2392 419 879	To make a claim (9am to 5pm, Monday to Friday)
Imperial College Security	+44 20 7589 1000	To inform Imperial College of an incident
British Embassy, Buenos Aires	+54 11 4808 2200	Legal difficulties, lost passports, etc.
British Embassy, Santiago	+56 2 2370 4100	Legal difficulties, lost passports, etc.

Table (6.1) Emergency contacts

6.5 Medical Facilities

Always call 911 (Argentina) or 131 (Chile) first in an emergency. In Spanish, Emergencias means emergency and Guardia refers to an A&E-style department.

Hospital Zonal Dr. Ramón Carrillo, Bariloche
Main public hospital, 24/7 emergency room
Address: Francisco Perito Moreno 601, San Carlos de Bariloche, Río Negro, Argentina
Telephone: +54 2944 426100

Clínica Chapelco, San Martín de los Andes
Main private hospital, 24/7 emergency room
Address: Marcelo Berbel 380, Q8370 San Martín de los Andes, Neuquén, Argentina
Telephone: +54 2972 42 9132

Hospital Dr. Óscar Hernández Escobar, Curacautín
Nearest hospital to Malalcahuello and Corralco

7: Risk Assessment

The risk assessment in Table 7.2 was prepared before the expedition. Risk is the product of likelihood and severity, each scored from 1 to 5 and graded using the key in Table 7.1, and the reassessed risk reflects the control measures in place. In practice, the hazards that most shaped the expedition were extreme weather, avalanche danger, icy roads and illness, and the controls for these were applied repeatedly through cancelled tours, rest days and conservative terrain choices. Illness has been added following the expedition.

Risk Level	Range	Risk Level	Range	Risk Level	Range
Low	1–3	Moderate	6–7	Very High	10–12
Low–Moderate	4–5	High	8–9	Extreme	13–15

Table (7.1) Risk level key

Activity	Hazard	L	S	Risk	Control Measures	Re-assessed
Ski touring	Avalanches	2	5	10	Avalanche training before departure; transceiver, probe and shovel carried by all; routes planned using daily avalanche forecasts and local guide advice.	6
	Unstable snowpack	2	4	8	Regular stability assessment; avoid steep slopes and terrain traps; travel one at a time.	4
	Crevasses	2	5	10	Glaciated terrain avoided wherever possible; routes informed by maps, imagery and local advice.	4
	Cliffs and drops	2	5	10	Reconnaissance of descent lines; clear communication throughout descents.	4
	Tree wells	2	5	10	Ski with a partner within audible distance in trees.	4
	Extreme weather (storms, high winds, white-outs)	3	4	8	Daily mountain forecasts; emergency shelter, spare layers and navigation tools; conservative turn-around times; avoid exposed ridgelines in poor visibility.	4
	Cold injury	2	5	10	Effective layering; nutrition, hydration and hot drinks; emergency bivvy kit; monitor each other.	6
	Sun exposure / snow blindness	3	3	9	SPF 50+ sunscreen; glacier-rated sunglasses and spares.	3
	Remote location / delayed rescue	3	5	15	Satellite communication device; route plans shared; group shelter and first aid kit.	8
	Fatigue / overexertion	3	3	9	Hydration, nutrition and rest; rotate leadership roles; monitor team wellbeing.	4
	Wildlife encounters	1	3	3	Keep a respectful distance; store food securely.	2
Driving	Icy or snowy roads	3	4	12	Winter tyres and snow chains; check road conditions; avoid night driving; carry shovel and warm gear.	6
	Long driving hours / fatigue	3	3	9	Rotate drivers; rest breaks every two hours.	3

Activity	Hazard	L	S	Risk	Control Measures	Re-assessed
	Border crossings	2	3	6	Complete vehicle and personal documents; check pass opening hours and weather; carry fuel, food and warm clothing.	2
	Vehicle breakdown	2	4	8	Spare tyre, tools and emergency provisions; roadside assistance details to hand.	3
General	Illness or injury	2	4	8	Comprehensive first aid kit; first aid training; nearest medical facilities identified.	3
	Respiratory illness spreading in shared accommodation (added post-expedition)	3	3	9	Build rest days into itinerary; carry cold and flu remedies; isolate symptoms where possible; seek medical advice early.	4
	Equipment loss or failure	2	3	6	Daily equipment checks; spares for critical items; repair kit.	2
	Communication failure	2	4	8	Multiple communication systems; devices charged daily; check-in times.	3
	Language barriers	2	2	4	Spanish-speaking guides on tours; translation apps on all phones.	2

Table (7.2) Risk assessment (L = likelihood, S = severity)

8: Conclusion and Recommendations

This expedition challenged us to adapt to volatile conditions and make informed decisions in a complex, wind-affected mountain environment. Through close collaboration with our guides and open discussion within the team, we significantly improved our touring technique, avalanche awareness and judgement, and came away with a far broader experience of Patagonian skiing than our original plan would have offered.

Measured against our objectives:

1. **Multi-day touring techniques:** Partially achieved. Ten days on skis, including eight touring days, transformed the kick turns and transitions of the less experienced members, and every decision gave practice in risk assessment. However, the Frey to Jakob traverse was cancelled due to an avalanche rating of 4 out of 5, and our multi-day experience was limited to an overnight tour at Refugio Piltriquitrón.
2. **Short ski film:** Footage was captured throughout the trip using a drone, GoPro and phones, and the expedition was shared on Instagram. The film itself is still in the works as filtration of almost 15 hours of footage is a full time job in itself!
3. **New terrain and mountain culture:** Achieved, and in ways we had not planned. The reroute into Chile took us to Corralco, Los Arenales and Volcán Sollipulli, and time spent with Javier and his family, local guides and refugio staff gave us a genuine insight into the mountain culture on both sides of the Andes.
4. **Exploratory ascent of Cerro Inviares:** Not attempted, as access to the Rucaco Valley depended on the Frey to Jakob traverse. This remains an objective for a future expedition.

Key takeaways for future expeditions include:

- Build contingency into the itinerary. Storm cycles moved us across a border and cancelled the centrepiece of the trip, and a flexible plan with a hire car made it possible to keep skiing.
- Treat wind as a primary decision factor alongside the avalanche forecast. It closed lifts, whole resorts and touring objectives more often than snow did.
- Work with local guides wherever possible. Both Jeremías and Javier transformed what we could achieve and confirmed our own judgement when it mattered.
- Book a vehicle with proper winter tyres and carry snow chains, and allow generous time for 4x4 transfers and border crossings.
- Plan for illness as well as injury. Recovery days and a well-stocked first aid kit are as important as avalanche equipment on a long expedition.

Beyond the physical challenge, this trip strengthened our confidence as ski tourers and reinforced the value of teamwork, preparedness and adaptability in the backcountry.



Figure (8.1) *Team photo watching the Argentina vs. Spain world cup final in Bariloche*

A: Appendix

A Social Media

Instagram: patagonia_exped

https://www.instagram.com/patagonia_exped/

B Expedition Team Contact Details

Feel free to get in touch! Please contact Francesca Rowley: fran.rowley@hotmail.co.uk

C Gear List

Ski Clothing

- Baselayers (legs and upper)
- Midlayer (fleece or softshell)
- Lightweight insulated jacket
- Expedition down jacket
- Hardshell jacket and shell salopettes
- Ski pants
- Ski socks (multiple pairs)
- Neck gaiter / buff, hat / beanie, sun cap
- Glove liners, lightweight uphill gloves, ski gloves and spares
- Whistle

Ski Equipment

- Touring boots, touring skis and climbing skins
- Adjustable ski poles
- Ski crampons
- Avalanche transceiver (three-antenna digital)
- Shovel and probe (minimum 2.8 m)
- Helmet, goggles, spare lens and sunglasses
- Touring pack with avalanche gear access and ski carry

Touring Essentials

- Headtorch and spare batteries
- Personal first aid kit and emergency blanket / bivvy bag
- Ski straps (1–3)
- SPF 30+ lip balm and SPF 50+ sunscreen
- Water bottle or soft flask (minimum 1 l)
- Skin scraper

Hut Equipment

- Hut booties and hut clothes
- Sleeping bag and liner
- Earplugs

- Mug, bowl and cutlery
- Cards or a book for the evenings

Group Equipment

- Ski, boot and binding repair kit
- Rescue sled / tarp and group shelter
- Group first aid kit
- Satellite-capable phones
- Map and compass
- Power bank and cables, multitool, lighters
- Drone, GoPro and spare batteries
- Snow chains (vehicle)

Ancillary Items

- Casual clothes for travel and town days
- Toiletries and personal medication
- Ski wax and travel tuning kit
- Swimwear (for the termas!)

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