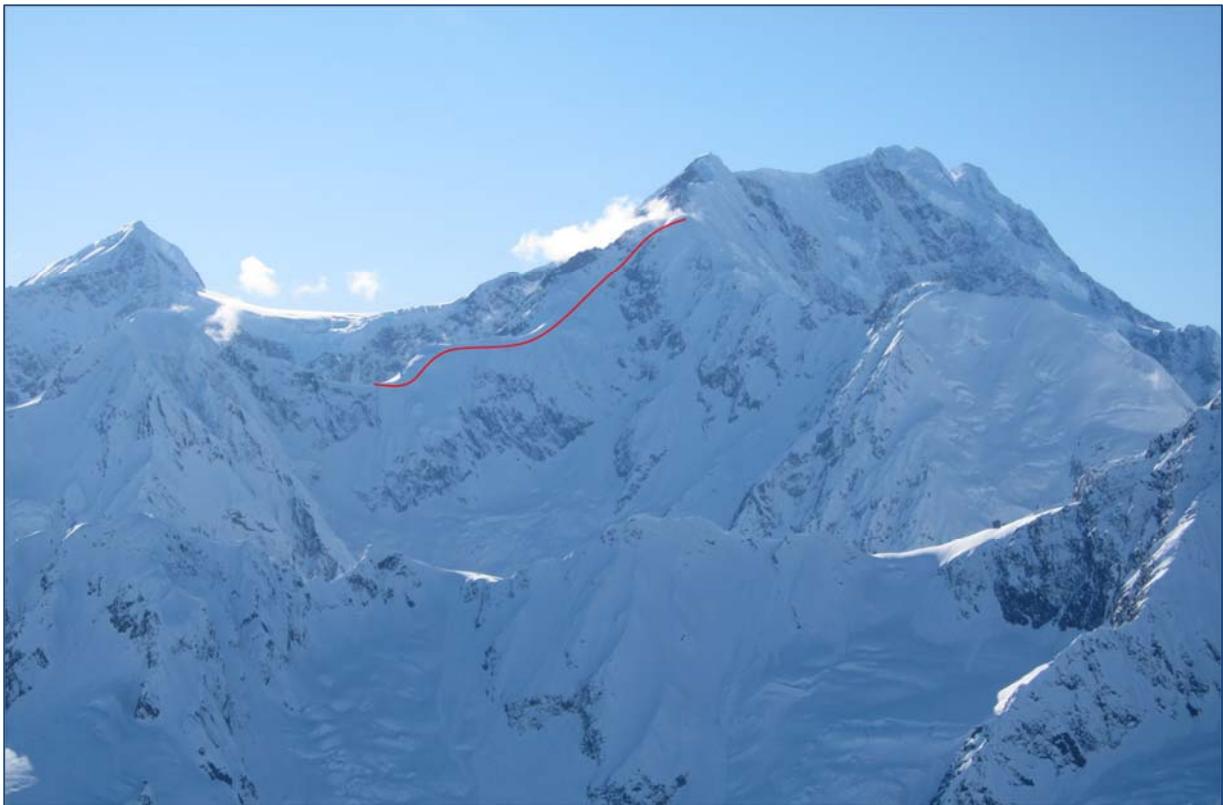


New Zealand Mt Crillon Expedition 2019

Fairweather Range, SE Alaska

Final Report



Aerial photograph showing the east and lower southeast ridges of Mt Crillon (12,726ft or 3979m). Our intended route was to follow approximately the red line (reaching the col from behind/south side) and continue up the skyline. Part of the lower northeast ridge is visible to the right.

Supported by: Mount Everest Foundation

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Photos and content by Paul Knott except where indicated.

Summary

After almost a week of delay due to insufficient visibility for the glacier landing, we reached base camp on the Brady glacier close to foresummit 7950ft and the east ridge of Mt Crillon. Deep soft snow meant we had to stamp out a takeoff runway, despite the power of the turbo-charged Beaver aircraft. The next day we spent a few hours making an access route around the toe of a ridge towards the start of the route, in preparation for an early twilight start. This turned out to be the limit of our progress. A series of fronts with significant snowfall and poor freezes prevented further safe activity. Following a forecast update projecting continuation of the same pattern until at least 23 April, we realised that we would have insufficient time to climb Mt Crillon or any other significant objective even if conditions subsequently improved. Hence, we flew out when a marginal clearance allowed, skirting banks of cloud as we had also done on the flight in. Unsettled and at times stormy low-pressure weather continued in the area until high pressure finally commenced on 27-28 April. By this time, we would anyway have needed to depart for our scheduled return.

Paul's nine previous trips to this part of Alaska/Yukon all produced a usable weather window for climbing. Other parties in those years were not always so lucky.

MEF Reference: 19/25
Area visited: Brady Icefield, Glacier Bay National Park, southeast Alaska.
Climbers: Paul Knott, Jacob Downie.
Contact: Paul Knott, College of Business and Law, University of Canterbury, Private Bag 4800, Christchurch, New Zealand.
 Tel: +64 3 369 3709 (work).
 EMail: paul.knott@canterbury.ac.nz
Objective: First ascent of the east ridge of Mt Crillon (12,726ft or 3979m).

Diary of events

| | |
|--------------|---|
| 3 April 2019 | Fly to Seattle. |
| 4 April | Fly Seattle - Juneau; food shopping in Fred Meyer, near Juneau airport. |
| 5 April | Marine Highway Juneau - Haines; buy fuel in Haines. |
| 6-9 April | Await glacier flying weather in Haines |
| 10 April | Fly by ski plane to base camp at 3913ft on the Brady glacier. |
| 11 April | Make tracks around toe of buttress towards route. |
| 12-14 April | At base camp in poor weather with some heavy snowfall. |
| 15 April | Return to Haines due to forecast low pressure systems to at least 23 April. |
| 16 April | Marine Highway to Juneau and onwards travel. |
| 21 April | Early arrival in NZ |
| 2 May | Originally scheduled arrival in NZ |

Background to the area

Climbers usually know the Glacier Bay National Park for Mt Fairweather (4663m). However, there is another striking group of peaks further south on the 'west arm' peninsula. South again is the huge expanse of the Brady Icefield. Of these, the most prominent is Mt Crillon (3879m), which rises 2500m from the glaciers below. The scale of Mt Crillon is such that it makes for an imposing view even from the park headquarters at Bartlett Cove, some 50 miles away.

Mt Crillon has received three ascents: the Washburn party in 1934 via the south flank, and ascents of the west ridge in 1972 and 1978. All these parties descended by their route of ascent. There have been at least six unsuccessful attempts, including several serious teams (Williams/Faulkner/Haberl 1992 and Pilling/Diedrich 1998) aiming at the north ridge. The north ridge makes a striking sight and arguably represents a 'last great problem' in Alaskan mountaineering.

Mt Crillon has seen no routes originating from the Brady Icefield on its east side. The literature mentions only one attempt on the east ridge, by Loren Adkins and Paul Barnes in 1988. There is no report on this attempt, and it seems likely they did not proceed since they instead climbed two easier (and somewhat distant) summits that season. More definitively, no less an authority than Bradford Washburn wrote in the 1941 *AAJ*: "after a thorough reconnaissance I believe a well-equipped party could succeed by way of the great eastern ridge. This climb has never been made and it appears to me to be one of the finest mountaineering challenges in North America."

Paul Knott and Kieran Parsons were to attempt the east ridge in 2014 (MEF 14/20), but were prevented from doing so by heavy snowfall and strong winds creating concerns for avalanche conditions on lower parts of the route.

Accessing the Brady Icefield

The Brady Icefield is relatively well travelled by the standards of these mountains. In the past, a number of parties have accessed it by kayak or boat via Reid Inlet at its northern end. Given the glacial retreat noted below, this will now involve more moraine travel than it did for earlier parties, although as we flew over it the terrain looked tenable.

For us, ski plane access was more suitable, because we were keen to use any good weather windows for climbing rather than load hauling. We flew in with Paul Swanstrom of Mountain Flying Service, Haines, who knows this range intimately and provides excellent service. He operates a Beaver aircraft – in exemplary condition – which has the potential to handle larger parties than ours as well as having a margin of power and sturdiness. We landed and made base camp at the same location as Paul's trip in 2014, at 3913ft (but close to the 4000ft contour in terms of position on the map) in a small bay just southeast of Pk 7950ft.

As always, Paul and Amy Swanstrom were fantastic hosts for us in Haines. We travelled to Haines up the Lynn Canal via the Alaska Marine Highway (ferry) after food shopping in Juneau. Flying into these mountains depends on fickle weather. Local knowledge and an array of webcams and weather data help mitigate the problem, and these helped make it possible for us to fly in five days after we arrived in Haines, despite continued cloud cover for part of the flight. We elected to fly out on 15 April, again with significant cloud present, with the aid of satellite phone conversations.

Notes on Mt Crillon east ridge

Our intended route was a snow slope leading from the south to the col dividing the east ridge of Mt Crillon from Peak 7950ft. This appears more expedient than the ridge from Pk 7950ft to the main massif, which appears narrow with a series of rock towers. Our potential route on this south-facing slope would have avoided seracs by climbing close to rock buttresses. These buttresses would shed snow under certain conditions. Higher on the route, the most likely line also traversed east-facing snow below an area of rock, presenting further susceptibility to conditions. Hence, the route would require a good settled period because the approach to the main upper ridge involves avalanche-exposed slopes facing both south and east/northeast.

On 11 April, we made a reconnaissance of the glacial terrain from base camp around the toe of an intervening ridge and partway up the alcove to our chosen route. This we did to a height of 3695ft,

marking waypoints to this point. The terrain we could see beyond looked benign, although the route itself was hidden by a buttress.

The longer approach from the Crillon-Bertha col is a potential alternative way to access the east ridge of Mt Crillon (we did see a route to the col that avoided seracs). This would involve more sustained exposure on the main east/northeast ridge, including a sharp-looking section at the northeastern end.

Other climbing in the area

Various climbs have been made in the past, including the Washburn party's route of first ascent of Mt Bertha, and several technical and serious lines on La Perouse. In terms of new summits and lines, Peak 7950ft behind our camp would be a worthwhile minor ascent and a good viewpoint. We might have climbed it over a 2-day trip were it not for likely unavoidable avalanche-prone slopes in the upper part.

A day's walk away, further opportunities exist on smaller peaks east and south of Mt Abbe, some of which consist of granite (in contrast to the poor sedimentary rock elsewhere in the range).

Another obvious target for future parties would be to take a more ski-oriented approach. The peaks on the southeast side of the Brady Icefield would be conducive to such a trip and have likely been visited rather seldom.

Despite these opportunities, and in the wider area vastly more, there seems to have been rather little climbing activity in the Glacier Bay area over the last few years.

Permits and bureaucracy

There is no permit system for climbing on the Alaskan side of this range. However, we did register our details with the headquarters of the Glacier Bay National Park in Gustavus.

Environmental compliance

We were diligent as always in complying with environmental commitments, including transporting all litter back to Haines for proper disposal, burying human waste deeply in the snowpack, and avoiding the use of marker wands on our travels.

Weather conditions and pattern

This aspect is worthy of careful consideration since it curtailed our activities so completely. During the trip, we experienced no extreme weather conditions, but a persistent pattern of low pressure systems moving over the area led to weak melt-freeze cycles, produced ongoing falls of wet snow around base camp, and often limited visibility. The unsettled pattern prevented us from committing to multi-day objectives, and even smaller-scale possibilities were limited by concerns about snow stability. The going underfoot was slow, even with snowshoes. After landing at base camp on 10 April, due to deep soft snow we had to stamp out a runway to allow for the takeoff – this had not happened on nine previous trips.

A useful source of data to give perspective on this is Juneau airport weather data on <https://www.weather.gov/ajk/localClimate>. This shows temperatures not far from average, except for a notably warm spell in late March and early April. This unseasonal warming brought the Haines backcountry ski season to an abrupt end, and meant that when we arrived there was virtually no snow around Juneau or Haines. Precipitation data from the same source also does not seem to diverge widely from the average, yet we understood that there had been such dry conditions in some towns in SE Alaska that there were concerns about water supplies. We saw no snow pile at Juneau or Haines airports, nor was there on at Yakutat airport. This contrasts starkly with Paul's first visit in 1993, when a large snow pile remained on the Yakutat airport apron even in early May. It also seems to be the

case that 'grey weather' creates more problems for climbing than are apparent on temperature and precipitation records.

We stayed in touch with weather forecasts during our time in the area, including while in the mountains. The patterns seemed to play out as forecast. When we flew out on 15 April, this was on the basis of a forecast of a continued series of low pressure systems crossing the area until at least 23 April. Given the need to let the storm snow settle after this time, we realised this meant we would have insufficient time to climb Mt Crillon or any other significant objective even if the pattern subsequently improved: we would have had to fly out on 29 April at the latest. In the event, stormy weather was evident in weather reports and webcams until high pressure finally arrived on 27 April. After this, conditions were settled for most of a week. Hindsight therefore supports the decision we took.

The overall pattern through the season shows consistency with Paul's previous nine trips, which mixed various storms with at least one settled high-pressure period. Unfortunately, in 2019 the settled periods appeared before our arrival and after our departure. Other teams have experienced this unhappy coincidence in the past, including one on the Yukon side of the St Elias range in 2006 that ran out of time before being able to fly in, and similarly one in 1993 that never left Yakutat.

One influence on weather patterns in this area is the El Nino / Southern Oscillation. According to reports on cpc.ncep.noaa.gov, winter/spring 2019 showed a weak El Nino, and in turn the diagram on climate.gov/enso illustrates a 'typical' El Nino weather pattern that has low pressure over the Pacific Ocean as we experienced. On the other hand, 2013 had wetter and larger storms of this nature, yet was not an El Nino year.

Another potential influence on the conditions we experienced is the general warming of both the Arctic and Pacific oceans – faster than the global average warming. All-time high temperatures were recorded all over Alaska later in spring and summer. Furthermore, some discussions refer to a southward movement of the Jetstream associated with a warmer arctic, and the possibility that this may support longer-duration weather patterns than before. This seems consistent with the month-long pattern we experienced.

Glacier conditions

Based on National Park Service photos of various glacier snouts, and local information, it is clear that the glaciers in this area are retreating and that summer firn lines are rising. We saw photographs taken in late summer showing a high to non-existent firn line on the west shoulder of Mt Abbe (site of base camp for MEF 09/11 and MEF 11/20). Access from here to peaks south of Mt Abbe such as Pk 8410 and Pk 8290 appeared cut off, potentially limiting the possibilities for climbing the granite pillars on the west sides of these summits. Equally striking was a new series of maps based on recent aerial photography: these present far larger areas of dark rock than the snow-oriented imagery shown in legacy USGS mapping. A further sign of change is the series of major rock avalanches observed in the range in recent summers, including in the east side of Mt Lituya (2012), Mt La Perouse (2014), and the Lamplugh Glacier area (2016). The phenomenon has been studied scientifically – for example Coe, J.A., Bessette-Kirton, E.K. & Geertsema, M. Landslides (2018) *Landslides* 15: 393-407. <https://doi.org/10.1007/s10346-017-0879-7>. Debris from these rock avalanches travelled many kilometres along almost-level glaciers below.

Due to the combination of weather patterns and glacier conditions, the period conducive to ski plane landings has shortened. Access to some areas may be curtailed after April, and aside from this the late season hazard from large-scale rock avalanches may be high, as noted above.

The spring snowpack may not be as reliably thick as in prior years, and the thickness of the underlying ice seems likely to be declining. Although we did not see visual signs of this around the base camp, from GPS data recorded at the end of this report, we can see that the 2019 base camp shows as 9ft lower in altitude than the similar 2014 base camp (3913ft against 3922ft) despite being 150m further up the (almost level) bowl. Additionally, the point where we crossed into the main inlet for our approach to the route was very similar in 2014 (OLDR5) and 2019 (R2), whereas the recorded height was 20.5ft lower. Details are recorded in the GPX file below for more precise comparison.

Finances

INCOME

| | GBP | Totals (GBP) |
|--------------------------|----------|-----------------|
| Mount Everest Foundation | £1000.00 | |
| Individual contributions | £5896.77 | |
| Total income | | £6896.77 |

EXPENDITURE

| | GBP | Totals (GBP) |
|-------------------------------------|----------|-----------------|
| Travel | | |
| Return flights Christchurch-Juneau | £2859.66 | |
| Flight change and baggage fees | £788.89 | |
| Marine Highway Juneau-Haines return | £153.35 | |
| Ski plane flights | £1150.09 | |
| Accommodation and transfers | £490.29 | |
| Meals and other travel expenses | £65.39 | £5507.67 |
| Food and supplies | | |
| Mountain food | £504.52 | |
| Coleman fuel | £25.87 | £530.39 |
| Insurance | £676.05 | £676.05 |
| Other items | | |
| Satellite phone rental and expenses | £182.66 | £182.66 |
| Total expenditure | | £6896.77 |

Exchange rates applied: USD/GBP 0.77; NZD/GBP 0.52.

GPS data

The following records the GPX waypoints from the GPS (using the WGS84 map datum). The device also recorded tracks when we used it to assist with navigation, which are too voluminous to print.

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<?xml version="1.0" encoding="UTF-8" standalone="no" ?><gpx xmlns="http://www.topografix.com/GPX/1/1"
xmlns:gpx="http://www.garmin.com/xmlschemas/GpxExtensions/v3"
xmlns:gpxtpx="http://www.garmin.com/xmlschemas/TrackPointExtension/v1" creator="Foretrex 301"
version="1.1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.topografix.com/GPX/1/1 http://www.topografix.com/GPX/1/1/gpx.xsd
http://www.garmin.com/xmlschemas/GpxExtensions/v3
http://www.garmin.com/xmlschemas/GpxExtensions/v3/GpxExtensionsv3.xsd"><metadata><link
href="http://www.garmin.com"><text>Garmin International</text></link><time>2019-04-
29T21:26:28Z</time></metadata>
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<wpt lat="58.616415" lon="-137.024456"><ele>1192.63</ele><time>2019-04-
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<wpt lat="58.600469" lon="-136.993816"><ele>1052.76</ele><time>2019-03-
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<wpt lat="58.610530" lon="-137.007790"><ele>1116.21</ele><time>2019-04-
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<wpt lat="58.600654" lon="-136.993504"><ele>1046.51</ele><time>2019-04-
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<wpt lat="58.597837" lon="-136.999440"><ele>1074.87</ele><time>2019-04-
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<wpt lat="58.599150" lon="-137.010487"><ele>1126.30</ele><time>2019-04-
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