

= Illecillewaet Glacier =

The Illecillewaet Glacier / ??l??s?l?w?t / is a glacier in British Columbia , Canada . It is located inside Glacier National Park in the Selkirk Mountains , a sub @-@ range of the Columbia Mountains . After the construction of the Canadian Pacific Railway (CPR) near the glacier ' s terminus , and the building of a hotel nearby , the glacier became a prominent tourist destination in the Canadian west . Easily accessible by road and railway , it is one of the most @-@ studied glaciers in North America . Its retreat over the last one hundred years has been extensively documented .

= = Physical characteristics = =

The glacier is located south of Mount Sir Donald in the Selkirk Mountains , west of Rogers Pass in British Columbia . The outflow of the glacier forms the headwaters of the Illecillewaet River . The Illecillewaet névé feeds three other glaciers : the Asulkan , Geikie and Deville . As of 2002 , the accumulation area of the glacier is 4 @.@ 92 square kilometres (1 @.@ 90 sq mi) while its ablation area is 3 @.@ 91 square kilometres (1 @.@ 51 sq mi) , for a total size of 8 @.@ 83 square kilometres (3 @.@ 41 sq mi) . Its estimated mean depth is 100 metres (330 ft) , and its highest point is measured at 2 @,@ 800 metres (9 @,@ 200 ft) . The exposed bedrock downslope of the glacier ' s terminus shows the effects of glacial plucking .

= = History = =

= = = CPR and Glacier House = = =

Although First Nations people were present in valleys to the east and west , evidence of aboriginal settlement in the Illecillewaet area has not been found . The first European to visit the glacier was Major A.B. Rogers , a railway surveyor , who examined the area in 1882 and 1883 in search of a viable pass . With the completion of the transcontinental Canadian Pacific Railway (CPR) through nearby Rogers Pass in 1885 , the glacier and its surrounding area became one of western Canada ' s first tourist destinations . Glacier National Park was established in 1886 , and Glacier House , a small hotel , was built near the north end of the glacier in the same year . The hotel was expanded in 1892 and 1904 , and by 1907 the glacier was described as the " most visited glacier in the Americas " .

At this point , the glacier was called the " Great Glacier " by CPR promoters . The name " Illecillewaet " is an Okanagan First Nations word for " big water " , and referred to the river before being applied to the glacier . It gradually replaced " Great " and was adopted by Parks Canada in the 1960s .

The new influx of visitors to the glacier brought with it both mountaineers and glaciologists . The first recorded ascent of the glacier was by A. O. Wheeler with Edward Feuz and Charles Clarke in 1901 , although it had most likely been climbed earlier . Wheeler and the Alpine Club of Canada built a hut near Glacier House for mountaineering use . Feuz was one of several Swiss guides hired by the CPR to accompany visitors to the glacier and up nearby peaks .

= = = Vaux family = = =

The Vaux family were well @-@ off Quakers from Pennsylvania . The family first visited Glacier House and Illecillewaet Glacier in 1887 . On a subsequent trip , they noticed a visible retreat of the glacier ' s terminus . The Vaux children , William , George , Jr . , and Mary (later Mary Vaux Walcott) were amateur photographers and began a study of the glacier using pictures taken from fixed points . William and George , Jr. presented their findings to the National Academy of Sciences in the U.S. Their study and methods were considered a " breakthrough " in the new field of glaciology . Mary Vaux would continue to visit the area every summer until her death in 1940 .

On a more anecdotal level , the Vaux family carefully photographed the glacier and surrounding area , first using glass plates which were transported up and down the mountain and sent back to Philadelphia ; and later more modern Mamiya medium format cameras . There is continuing photographic evidence to support their more scientific measurements . George Vaux , Jr . ' s grandson Henry Vaux , Jr . , (also an alpine photographer) noted the static nature of the glacier ' s alpine area , related to its short growing seasons . The only two major differences between contemporary times and the early 1900s are the retreat of the glacier and the presence of the Trans @-@ Canada Highway . Thus , he saw trees that were observed by his grandfather from the same perspective , and there is little difference " except for the glaciers , most of which are back at least two kilometres , and of man @-@ made things . ?

= = = Trans Canada Highway = = =

In 1916 , the CPR constructed the Connaught Tunnel , which bypassed the Glacier House site . The numbers of visitors declined , and , in 1925 , the hotel was closed . It was demolished in 1929 . For a thirty @-@ year period , the previously popular glacier was mostly unvisited . In 1962 , the new Trans Canada Highway was completed and its route closely followed that of the original CPR line . Once again , Illecillewaet was joined with a major transportation route . Parks Canada began to improve facilities at the glacier ; the Illecillewaet campground was opened and new trails were constructed giving access to the glacier , now located significantly farther away . The latter half of the century saw more glaciological studies as the glacier ' s retreat became more pronounced .

= = = Glaciological studies = = =

Although sparse compared with studies of European glaciers , studies of the Illecillewaet are detailed by North American standards . The first scientific study of the glacier was performed by the Vaux family from 1887 to 1912 . George , William , and Mary Vaux with others , including A.O. Wheeler and C.E. Webb measured the glacial retreat mostly with annual photos from fixed points . The period of World War I and the Great Depression saw fewer observations ; the closing of Glacier House in 1925 drastically reduced the number of visitors to the area . The federal Dominion Water and Power Bureau started assessing the glacier in 1945 using baseline measurements . The Bureau conducted yearly studies from 1945 to 1950 , and every two years from 1950 to 1960 . There were no measurements taken from 1960 to 1972 , when Parks Canada began surveying . A study which examines rock lichen in order to determine glacial retreat was begun in 1996 . Satellite imagery has also been used to measure the glacier ' s size .

= = = Retreat = = =

Since scientific research began in the late 1800s , Illecillewaet Glacier has been retreating and shrinking , with shorter periods of small advances . Between 1887 and 1962 the terminus of the glacier retreated almost 1 @.@ 5 km (0 @.@ 93 mi) . Parks Canada research indicates that there was a period of advancement from 1972 to 1986 , with the terminus advancing 100 m (330 ft) . In total , there was a net retreat of 1 @,@ 433 m (4 @,@ 701 ft) in the period of 1887 to 1984 . The glacier lost about 28 % of its mass by 1951 ; it regained maybe 1 % by 1986 .