



Post-Intelligencer Photograph by Jim Huff

Louis Whittaker, Mountaineer and Mount Rainier guide, inspects a tunnel under Stevens Glacier above Paradise Valley. This is one of several huge caverns carved out under rapidly receding mass of glacial ice.

PARADISE GLACIER VANISHES

By WALTER RUE

The following article, written by Walter Rue, appeared in the Seattle Post-Intelligencer for September 11, 1954.

One of Mount Rainier's glaciers, the Paradise lobe of the Paradise-Stevens ice mass, has disappeared. It no longer exists as a glacial entity.

Yet Nisqually Glacier on the same mountain has grown at higher elevations and is being closely watched by glaciologists.

Those startling and highly interesting developments have been reported by Merlin Potts, Mount Rainier National

Park naturalist who is getting ready for one of the most important glacial surveys ever made on Rainier.

Paradise Glacier, on the mountain's southeast flank (above Paradise Valley), didn't vanish overnight, but the end came rather swiftly at that. The glacier's demise began long ago when streams of water pouring down a steep rock wall started cutting tunnels under the ice mass. Ice caves developed and grew, largely as a result of the tunneling, and melting began along the cavern walls.

The melting from within and below, as well as on top, hastened the end of Paradise Glacier, Potts explained, and today only remnants remain of a once-large ice field that extended over a ridge and tied in directly with Stevens Glacier.

The well-known Paradise ice caves, a big tourist attraction, are actually in the Stevens ice now, although they'll probably be popularly known as the Paradise Caves for years to come.

The wearing away of Paradise Glacier ties in with the general picture of glacial recession on mighty Rainier, whose glacial system exceeds that of any other single peak in the United States.

Rainier's glaciers are replenished every year by new snows, but in general they lose more substance by summer melting than they gain from the snow pack.

Is Nisqually Glacier an exception?

Time and the weather will produce an answer. Meanwhile scientists are focusing attention on a surge in Nisqually's ice. Their findings show that Nisqually has grown in size at higher elevations since 1944 and is now 13 feet thicker on the average in the vicinity of 6,000 feet. At one point the glacier has a 71-foot bulge.

The increase is attributed to heavier snows of the past decade, along with a "probable assist" from the strong earthquake which hit the Pacific Northwest on April 13, 1949.

The principal increase in Nisqually's hump was noticed when the glacial survey of 1948-49 was made. This led many to believe that the violent earth shock loosened thousands of tons of ice and snow and piled it up lower on the glacier.

Dr. Ing Walther Hofmann of the Technical University of Munich, Bavaria, made a photogrammetric survey of Nisqually Glacier in 1952 and reported:

"Though not showing such impressive characteristics of an advance as Coleman Glacier (on Mount Baker), the Nisqually Glacier at its higher elevations exhibits the same picture of a very ac-

tive, growing glacier."

Dr. Hofmann noted that measurements by American glacial experts showed "considerable thickening." He described the lower part of Nisqually Glacier (the present terminus and the ice behind it) as dead ice, and added:

"Time will show whether the thickening of the higher parts will survive long enough to affect the territory of the tongue. We can only wait and hope."

Surveys show that Nisqually Glacier has grown in volume between 8,000 and 12,000 feet, but in a 40-year period the ice field in its lower parts has shown an annual decrease of about 3,733,500 cubic yards. It would require 268 Liberty Ships to haul away that amount of ice each year.

In 1912 Rainier's entire glacial system covered about 45 square miles. Today the figure is around 40 square miles, or an annual loss of approximately 77 acres of ice.

Here are some statistics on glacial recession:

Nisqually Glacier—Receded 50 feet from September 21, 1952, to September 16, 1953, as compared to 76 feet from September 14, 1951, to September 21, 1952. Average decrease, 59.5 feet annually in 40-year period.

Paradise-Stevens Ice Mass—Receded 82 feet from September 22, 1952, to September 21, 1953, as compared to only 48 feet in the two-year period from September, 1950, to September, 1952.

Emmons Glacier—Receded 160 feet from September, 1951, to September, 1953, as compared to 88 feet from October, 1949, to September, 1951.

Carbon Glacier—Receded 84 feet, September, 1951, to September, 1953. This compares to a 75-foot melt between October, 1949 and September, 1951.

Time will tell whether the attrition of summer warmth will be balanced by sufficiently long cycles of heavy snows to keep the "rivers" of ice perpetually.

One thing is certain. They'll glisten in the summer sun for a lot of future generations of the earth's people.