



COWLITZ GLACIER

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## THE GLACIERS OF MOUNT RAINIER

IN COMPARISON WITH OTHER WELL KNOWN SYSTEMS OF GLACIERS

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It is often asked, what other glacial field in the United States compares with that of Mount Rainier, and also, whether any of the Swiss glaciers are larger. It is an interesting fact that the glacial system of Mount Rainier is the largest in the United States (exclusive of Alaska) and that it has glaciers longer than any others in this country. Also it is a fact that the Swiss glaciers are a more extensive system and individual glaciers there exceed in length and area the largest that Mount Rainier has to offer.

On Mount Rainier there is a continuous ice and snow-covered region, approximating the form of a circular disk about the summit, having an average diameter of 7.8 miles, equaling an area of about 48 square miles. The longest single glacier is the Emmons, on the

northeast side, with horizontal length of 5.9 miles, and varying in width from  $1\frac{1}{2}$  to  $\frac{1}{2}$  miles. This glacier is intimately connected with the Ingraham and the Cowlitz glaciers, and the horizontal length of the continuous ice flow, involving parts of these three glaciers, is 6.5 miles. The next longest glacier is the Carbon whose length (below the Willis Wall) is  $5\frac{1}{4}$  miles, with varying width from 1 to  $\frac{1}{2}$  mile.

On Mount Baker the total horizontal area of glaciers is about 31 square miles. The longest single glacier is the Deming with horizontal length from the summit of 4.3 miles. This is on the southwest side and is a tongue extending from the general ice and snow covering of the mountain.

In the Glacier National Park there are about 100 glaciers scattered over about 520 square miles of mountains, with a combined glacial area of about 22 square miles. The largest is the Blackfeet with an extreme length, as the ice flows, of 1.8 miles. Its average length along flow is  $1\frac{1}{4}$  miles and its average width is 2.6 miles. Its area is  $3\frac{1}{4}$  square miles. If we include with this, the adjacent glaciers of Harrison ( $1\frac{1}{2}$  sq. m.), and Pumpelly (0.9 sq. m.), we have a practically continuous ice-covered area of 5.65 square miles. This is easily the largest continuous ice-covered area in Glacier National Park.

On Mount Hood the horizontal area of glaciers is about  $6\frac{1}{2}$  square miles. The longest single glacier is the Eliot, on the northeast side, whose length from the summit is about 2.7 miles. For most of its length the width is about  $\frac{1}{2}$  mile.

On Mount Shasta the horizontal area of glaciers is about  $4\frac{3}{4}$  square miles. The longest one is the Wintun on the east side, with a length of 2 miles and a width varying from  $\frac{1}{2}$  to  $1/10$  mile. The glacier having the largest area is the Hotlum, on the northeast side, with an area of 2.34 square miles.

The above dimensions of glaciers are the horizontal measurements scaled on the United States topographic maps. As any one glacier has usually a steep slope, its actual length is greater than this scaled length.

In Switzerland, it is estimated there are about 470 glaciers with a combined area of about 710 square miles. This does not include many Alpine glaciers in Austria and other countries. Switzerland has the most extensive Alpine glaciers, and the largest one is the Aletsch, in the Bernese Alps, with a length of  $16\frac{1}{2}$  miles and a width of more than a mile. The next one in length is the Unteraar, 10.4 miles. Two others follow, the Garner, in the Pennine Alps, and the Viesch, in the Bernese Alps, each with a length of 9.4 miles.

REFERENCES: Topographic Map of Mt. Rainier National Park, U. S. Geol. Survey, surveyed, 1910 to 1913, inclus.

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Mt. Hood Quadrangle, U. S. Geol. Survey, surveyed, 1907 and 1909-11.

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