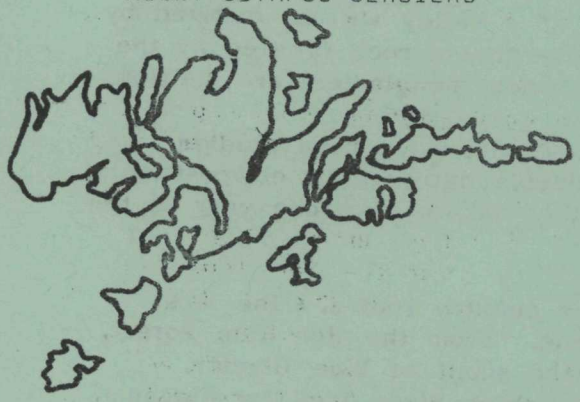
OLYMPIC NATIONAL PARK

Glaciers

MOUNT OLYMPUS GLACIERS



(aerial view)

Glacial ice is one of the foremost scenic and scientific values of Olympic National Park.

There are about sixty glaciers crowning the Olympics peaks; most of them are quite small in contrast to the great rivers of ice in Alaska. The prominent glaciers are those on Mount Olympus covering approximately ten square miles. Beyond the Olympic complex are the glaciers of Mount Carrie, the Bailey Range, Mount Christie, and Mount Anderson. In the company of these glaciers are perpetual snowbanks that have the superficial appearance of glacial ice. Because they are lacking in the criteria below, they are not true glaciers.

True glaciers are structurally three layered bodies of frozen water. The top layer is snow; the middle neve, or mixed snow and ice; and the bottom layer is of pure ice, which is quite plastic in nature. Crevasses or deep cracks in the glaciers form as the ice is subjected to uneven flow over alpine terrain. Another structural feature is the bergschrund, which is a prominent crevasse-like opening at the head of the glacier where the ice has been pulled away from the mountain wall.

The rate of glacial flow is quite variable, and Olympic glaciers are "slow-moving" in contrast to some in Alaska which occasionally move at the rate of several hundred feet per day for short periods of time. There is no great advance of Olympic glaciers today, but there is not a rapid melting back of the ice either. Forward surges in glacial flow often occur after a number of very heavy winters and cool summers, but such activity has been relatively infrequent with Olympic glaciers in recorded time.

The climate influencing Olympic glaciers is wet and temperate. This is clearly shown in the Mount Olympus complex of glaciers which receive the full impact of Pacific storms. The average annual precipitation is about two hundred inches; most of the moisture coming in the form of snow. Snow nurtures the glaciers in the accumulation zone or at the origin of the ice. Most of the melting or ablation occurs near the termini or snouts of the glaciers. As with human finance management, glaciers work with a budget and expenditure plan. A vigorous glacier will be maintained by a heavy accumulation of snow in the winter and only average melting during the summer. The freezing point in late spring and precipitation in early fall appear to be critical items in relation to this gain and loss. Excessive melt before and after the normal melt season would result in an impoverished budget for the following year.

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The movement of glacial ice, past and present has produced striking geological features in the Olympic mountains. The lake basins, U-shaped valleys and jagged peaks are the products of massive glacial erosion that occurred many thousand of years ago when the year around climate was much colder. This erosion process continues today, but on a much smaller scale. As glaciers advance and retreat, rock is plucked, transported, and deposited by moving ice. The deposition of rock results in medial (middle), lateral (side), and terminal (end) moraines. In many cases, a glacially created bowl (cirque) at the head of a valley will be dammed by a terminal moraine to create a lake basin. The finely ground rock created by the glaciers often makes the glaciated rivers look milky when the glaciers are melting.

The glaciers on Mount Olympus, especially the Blue Glacier have been studied intensely since 1957 by scientific groups seeking valuable data on the composition of an Olympic glacier and how the ice responds to the climate from one year to the next.

Access to the Olympic glaciers is by trails and cross country routes. The most visited glaciers in the Park are the Blue and Anderson. From the Hoh Rain Forest, the upriver hiking trail leads eighteen miles up to the snout of Blue Glacier. Anderson Glacier can be reached by hiking the Dosewallips River Trail for eleven miles or from the west side by the East Fork of the Quinault River for sixteen miles. To visit the other glaciers requires more mountaineering knowledge and time.

Travel on glacial ice is a specialized skill of mountaineering requiring the basic use of climbing rope, ice axe, crampons, and good judgment by the individual climber when accompanied by experienced leaders. The presence of snow bridged crevasses on glaciers is a very great hazard to climbers and no one should attempt glacier travel alone. Self evacuation from a deep, steep walled crevasse is nearly impossible.

The National Park Service hopes that you will have many opportunities to visit the glaciers of Olympic National Park or to view their ice splendor from such vantage points as Hurricane Ridge and Deer Park, which is a rewarding experience in itself.

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