

State's smallest glacier has disappeared, observers say



Mount Thielsen is seen in October 2019. Brooke Herbert/The Oregonian

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The News-Review

Until recently, Oregon's southernmost glacier was on Mount Thielsen, an extinct volcano mountain in the Cascade Range, east of Diamond Lake in Douglas County.

But sometime over the past half decade, Lathrop Glacier disappeared.

Anders Carlson, president of Oregon Glaciers Institute, said Lathrop Glacier was a little less than half the size of a football field, just 0.002 square kilometers in area. It was Oregon's smallest glacier.

The glacier formed two arms going down steep chutes.

"It looked like a very vertical water slide at a theme park, basically," Carlson said.

Because of that, it collected avalanche slides, storing snow "almost like soda cans in a vending machine," he said.

The area is heavily shaded, with very little direct sunlight.

It was well set up to build a glacier in what is otherwise a hot, dry place — from a glacier's point of view, anyway.

A pool at the east edge of the moraine at the glacier's bottom-fed Thielsen Creek and formed a miniature ecosystem.

"A lot of little vegetation living in a very lush setting that would not exist otherwise if there was not a glacier there giving it water all summer, when there's no snow otherwise around," Carlson said.

There's likely enough buried ice to keep the creek going another 10 or 20 years, but then it will dry up and the little ecosystem will disappear, he said.

An old glacier

The glacier had probably been in existence hundreds, maybe thousands of years.

"Since the Romans or something like that, there had probably been some kind of glacier ice formed on that area there," Carlson said.

But it wasn't discovered until 1966, when Ted Lathrop spotted it on a hike.

Lathrop died in 1979, but The News-Review spoke to his nephew Ralph Nafziger, who returned with his uncle to the Lathrop Glacier in 1968 and returned again many times in the years after that.

Nafziger worked as a geochemist for the U.S. Bureau of Mines in Albany until 1996. He also enjoys hiking.

"I've climbed mountains all over the world and most of them had glaciers on them," he said.

The year before he spotted the glacier on Mt. Thielsen, Lathrop had served as the

resident physician on an expedition to the Juneau ice fields and learned something about them.

So when he looked down the mountain's steep north slope, he was pretty sure that was what he was seeing.

Nafziger, Lathrop and a U.S. Forest Service district ranger took a closer look in 1968.

They followed the Pacific Crest Trail, climbed up to a ridge and looked right down.

"It was a sheer drop, almost 90 degree drop. We were all young. We rappelled down to the ice on the glacier," Nafziger said.

A glacier must be, by definition, moving ice. So they set up some stakes to measure the movement.

The next year they returned and found there was movement. But all their stakes had slid down and were lying in a pile at the bottom of the glacier.

Since the glacier was clearly too steep to measure its exact movements with stakes, Nafziger resolved to return regularly and photograph the glacier to record its changes.

"We had to get there just at the right time, because if we got there too early there was still snow to be melted off the ice, and we couldn't get an idea of how big it was. If we got there too late, then the new snow started," he said.

Some years there was new snow as early as Labor Day. Other years it was the end of October.

He learned that over time, the glacier was shrinking. In 2016, the last year he saw it, there wasn't much of it left.

Nafziger can't climb anymore for health reasons, so he never saw it after that.

The exact date of Lathrop Glacier's demise isn't known. But in 2020, when the Oregon Glaciers Institute visited the site again, it was gone.

So what was the culprit in Lathrop Glacier's disappearance? The chief suspects, according to Carlson, are climate change and the brutally hot summer of 2015.

It's likely, he said, that they worked together to melt Lathrop.

The Cascades have grown significantly warmer overall thanks to climate change. The summer average has risen between 2 and 3 degrees Fahrenheit since the early 1990s.

"It's dramatic warming that is not being seen at lower elevations," Carlson said.

As it gets warmer, the snowpack melts out earlier.

Then came the summer of 2015. It was the hottest summer on record in the Cascades.

The extra warm summer was due in part

to it being an El Niño year.

Then, too, there was "the Blob," a "weird warm water mass" off the coast of Oregon that both warmed the air and blocked the snow, Carlson said.

That year had the lowest snowpack ever on record.

With Lathrop's disappearance, the state's southernmost glacier is now the Crook Glacier on Broken Top Mountain west of Bend.

Could come back

While Lathrop Glacier has disappeared, this doesn't have to be the end of its story.

Portland State University professor Andrew Fountain's lifelong love of snow and ice turned into a 40-year career studying glaciers.

He said small glaciers like Lathrop often disappear one year and reform in another.

"I'd be very surprised if it hadn't happened before. On a good snow year I could see it coming back," he said.

Still, he said, 15% of the glaciers in Oregon and Washington state have disappeared

since the 1950s, and climate change is the "dominating force" in why that's happened.

Fountain said he recently submitted a study to the Journal of Geophysical Research that suggests the glaciers of the Olympic Mountains will largely disappear by 2050 or 2060.

Oregon will still have some glaciers then, but a lot of them will be gone, he said.

"It only dawned on me a couple of months ago that, wait a minute, maybe in 50 years nobody will be reading my papers because there's nothing to read about," Fountain said.

Carlson predicted Lathrop could come back if humans stop contributing to climate change.

"We could start cooling down again if we could reduce greenhouse gases in the atmosphere. The state wants to grow glaciers, and it wants to have snow," he said.

With a cooler climate, the rain would turn to snow and the snow would stick around long enough to form a glacier.

"It's not a done deal yet. We could go back, and the glaciers will regrow," he said.

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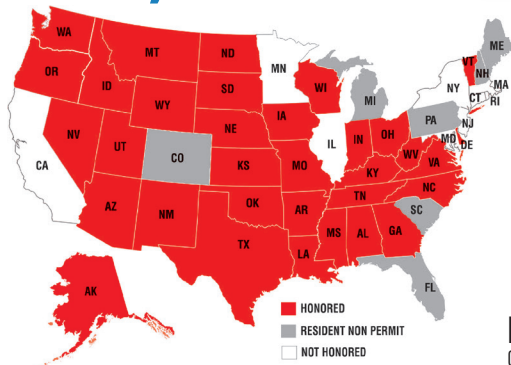
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