

Among Winter Olympic cities, Tahoe will soon be too warm to host

January 31 2022, by Lisa M. Krieger



Credit: Pixabay/CC0 Public Domain

Towering Squaw Peak has groomed generations of America's most elite winter Olympians, from racer Tamara McKinney and freestylist Jonny Mosely to six members of this year's Alpine Team U.S..

But Lake Tahoe's [snow](#) will be too patchy and too wet to host future

Winter Olympic Games, according to a new analysis, dashing hopes of repeating the 1960 honor that built the region into a powerhouse of winter sports.

Because of [climate change](#), the resort—formerly Squaw Valley but now named Palisades Tahoe—is no longer a dependable site for the Games, with the risk of scant and soggy snow during more than half of February, according to an international team of researchers led by the University of Waterloo in Canada.

With continued high emissions, by mid-century the Olympics will be too hot to handle for the resort. And estimated 50% to 89% of its February days will have insufficient or wet snow and 25% to 50% of days will be too rainy or warm for competition. By 2080, it will be unreliable nearly 90% of the month.

"It is one of the more vulnerable locations to climate change," said Waterloo researcher Natalie Knowles, a former Truckee resident and ski racer who now investigates the impact of global warming on winter sports.

Without a rapid shift away from burning fossil fuels, "things are extremely unreliable—in terms of having the right snow, the right weather," she said. "There's an inconsistency that's difficult to compete on."

The report comes just as the world prepares for the 2022 Winter Olympics in Beijing, starting Feb. 4. It will be the first Winter Games to use almost entirely artificial snow. Snowmaking is becoming as much of an Olympic tradition as gold medals: In 2014, 80% of the snow in Sochi, Russia, was manufactured; four years later, that rose to 90% at South Korea's Pyeongchang Games.

But even artificial snow isn't enough to save sites, like Palisades Tahoe, that will be too warm. And the storied history of other Olympic sites—including France's Chamonix and Austria's Innsbruck—also appears to be coming to a close, the report concluded.

By the end of the century, if the pace of global warming continues, only one former host venue—the mountainous northern Japanese city of Sapporo—will have enough snow to host the Winter Games.

However, if the Paris Climate Agreement emission targets can be achieved, the number of reliable host cities jumps to eight: Salt Lake City, Lake Placid, Vancouver, Calgary, Lillehammer, Oslo, Nagano and Sapporo.

Using climate data from previous Winter Games locations and applying climate-change models to predict future winter weather conditions, the team found that the average February daytime temperature of host cities has steadily increased—from 32.7 °F in the 1920s until the 1950s, to 43.3°F in the first half of this century, including in Beijing. It takes the perfect mix of cool temperatures and moisture-rich air to create a natural snowstorm.

Using this data, the team assessed the likelihood that each site would have below-freezing nighttime temperatures and at least a foot of snow, either natural or manmade.

Once planned, the Olympics can't be canceled. But it's hard to deploy a contingency plan. In 1980, Lake Placid staffers shoveled truckloads of snow onto barren cross-country ski trails. Vancouver airlifted buckets of snow on artificial moguls made of hay bales. In the southern Russia resort city of Sochi, , skiers landed in puddles. Even at Lake Tahoe, desperate organizers faced with dry slopes before the 1960 games brought in Native Americans to perform snow dances and a snow seeder

to pump clouds of silver iodide particles into the sky—before a storm delivered 7 feet of powder, just in time.

Moreover, unreliable conditions aren't safe or fair for athletes competing in outdoor events.

Off-course downhill skiers, who approach speeds of 100 miles per hour, may hit rocks, grass or trees. Big air snowboarders could descend from the sky into dangerous "bomb holes." Swings in temperature would make a slalom course unfair—either fast and icy, or slow and slushy, depending on the skier's time slot.

Climate change is often blamed for wildfires, flooding, mudslides and hurricanes. But it also threatens a sporting culture that defines winter life.

In the future, [ice skating](#) may have fewer Wayne Gretskys. As average temperatures continue to rise, the cities of Boston, Chicago, Detroit, Montreal, New York and Toronto could lose up to one-third of their current outdoor skating days, according to a National Hockey League and RinkWatch analysis of climate models and data.

For alpine climbing, a shrinking season means more people on fewer routes. Traversing a glacier is more treacherous, as crevices widen. Frequent freeze-and-thaw cycles pry away loose rocks, triggering debris falls. And when ice sheets melt and shift, they trigger avalanches. We may lose some iconic routes.

The American ski season shrunk by an average of 34 days between 1982 and 2016 and levels of snow cover saw an average drop of 41%, according to a study in the journal *Geophysical Research Letters*. February—winter's apex, the Olympics month—may be less reliable.

For Olympic organizers, "the risk of hosting an event, with scheduled events within two weeks, is much more difficult," said Knowles.

Reminders of Squaw Valley's 1960 Games still shine at the resort, with the Olympic flame burning at the base of Squaw Valley Road and Olympic rings greeting all who drive into the village.

With 6,600 skiable acres and more than 270 trails, it continues to inspire. Future Olympians practice 100-gate slaloms down Red Dog Face, build endurance on 3.2-mile Mountain Run and hone their balance on the resort's vast off-piste terrain.

To cope with climate change, the resort is investing in new snow-making technologies that make snow at warmer temperatures. It is also taking steps to reduce emissions on the mountain, such as a transit system to reduce driving and renewable diesel fuels in some of its grooming machines.

"Climate change is on the minds of anybody who loves this sport," said Palisades Tahoe spokesperson Alex Spsychalsky. "'Our whole industry relies on being able to access the right conditions.'"

But as the planet warms, Olympic prospects dim.

"It's unthinkable," said Mike Reitzell, president of Ski California, representing the state's resorts. "As a nation, having the Olympics here is so glorious and unifying. It's hard to imagine that the day may come when we just don't have the capability."

"Change needs to happen faster than what's happening," he said.

MediaNews Group, Inc.

Distributed by Tribune Content Agency, LLC.

Citation: Among Winter Olympic cities, Tahoe will soon be too warm to host (2022, January 31)
retrieved 25 April 2024 from
<https://phys.org/news/2022-01-winter-olympic-cities-tahoe-host.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.