Slalom course for ski areas facing future without snow

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Climate change has had a devastating impact on some European ski resorts with a lack of snow forcing some to begin diversifying the activities they offer visitors

As temperatures rise there is less of it or sometimes even none at all—global warming is forcing ski areas to think about the once unthinkable, a future without snow.

Some in the French Alps have gone beyond thinking and begun diversifying the activities they offer visitors, particularly those at around 1,300 metres (4,300 feet) altitude.

It's this level—where ski lifts sprouted like mushrooms in the 1960s and 1970s in what "democratised" winter sports in France—that scientists say will face "highly variable annual " fluctuations in snowfall.

According to the regional authority measuring the impact of climate change, the Alps have seen a 30 percent drop in the amount of snowfall in the past 30 years and the average temperature has climbed 1.6 degrees Celsius (nearly 3 degrees Fahrenheit) since 1960.

"The rain-snow line could climb by 450 to 600 metres (1,475 to 1,970 feet)," said Thierry Lebel, head of the Hydrology Transfer and Environment Research Laboratory in Grenoble, thus making the season a wash out for ski areas at lower elevations.

Downhill for downhill

At Drouzin-le-Mont, a small family-oriented ski area in the Haute-Savoie at an elevation of 1,250 metres, the municipality took control in 2013 and launched a conversion project.

Out went the fixation with downhill, or alpine skiing. In came a "mountain lite" project.

Out went the ski lifts and snow cannons. In will come sledding and skijoring (where dogs or horses pull skiers), snowshoeing and dogsledding.

"It has now been three seasons we haven't been open. It was no longer profitable," said Franck Vernay, first deputy mayor of the village of

Biot.

The village, which counts 600 residents, has an equal number of hotel beds.

"We haven't given up on skiing but we've got to try to lure people in other ways. Otherwise its certain death," he said.

Property prices have plunged, but the village is still hoping to avoid the fate of Saint-Honore.

Launched in the 1980s, the ski area at 1,500 metres altitude in the Isere region had 1,400 hotel beds, but shut in 1993 due to a lack of snow and an abundance of financial difficulties. For two decades it looked like a ghost town and only now is being rehabilitated.

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Shorter seasons

The Alps are not alone in being affected by global warming.

Swedish ski areas face seeing their season cut down to two months by 2050, according to their national association.

In Dalarna County northwest of Stockholm, seven out of its 30 small ski areas have had to close since 2008 as they couldn't afford snow cannons.

The association of Swedish ski areas looks at the glass as more than half full: snow-making equipment had allowed 80 percent to open for the past 30 years despite their low elevation. The most frequented resort, Are at 1,300 metres, even hosted the alpine world ski championship in 2007.

In France, the ski season risks being cut by a month by 2040 and by two-and-a-half months by 2080, according to Educ'Alpes, an association ski instructors.

Ski areas are doing more than just instal snow cannons.

Removing stones, replanting grasses and better grooming methods have also helped them considerably reduce the amount of snowmaking they need, thus reducing the impact of weather.

Even Val Thorens in Savoie, with a base elevation of 2,300 metres making it the highest ski area in Europe, is adapting its practices.

"We take sun exposure much more into account, we groom other slopes that are sheltered from the prevailing winds and we use artificial snow to make better use of natural snow, said Benjamin Blanc, who is in charge of grooming Val Thorens' trails.

This year it will use a GPS programme to help determine which areas have received less snow to better focus their grooming efforts, which should result in fuel savings of 20 percent.

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Shrink wrap shrinking glaciers ?

Even if high elevation ski areas still have plenty of the white stuff at the height of winter, it's the summer that's worrying professional skiers, the season when Alpine glaciers have been receding.

According to Educ'Alpes, the glaciers have lost 26 percent of their surface and a third of their volume over the past 40 years, leading ski areas like Val Thorens to close its glacier to skiers a decade ago to ensure its protection.

"Before we trained at a very low elevation, around 2,400 meters, even in July," recalled Fabienne Serrat, who won two golds at the 1974 World Championships for France. "Today many youths who compete go to South America" to train.

The situation has saddled Val Thorens with a dilemma. It closed its glacier to protect it, yet triggers avalanches to supply slopes below.

"But in doing so we are taking away snow" that feeds the glacier, said Blanc.

For climate scientist Lebel, the outlook for the glaciers isn't good.

"With temperatures 2 or 3 degrees higher, those below 3,000 metres altitude will disappear," he said, although the rate at which they recede will vary depending on topography and exposition to the sun.

French Olympic gold skicross champion Jean-Frederic Chapuis, who regularly trains on glaciers, believes that a increasing the practice of covering of glaciers with plastic sheeting to slow their melting—as is already done in a few places in Switzerland and Italy—may be an answer.

But for Lebel that "is a desperate, local response that will only delay

things. We need to act on our carbon emissions."