

Is ski tourism heading downhill thanks to climate change?

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Rachael Carver conducted her dissertation research in the Austrian Alps. Credit: Rachael Carver

Is ski tourism on a downward slope or can winter holiday resorts weather the ongoing impact of climate change?

Staffordshire University graduate Rachael Carver and Professor Fiona Tweed investigate the impacts of melting snow and ice on the future of tourism in a new paper published in *Geography*.

The article is based on [field research](#) that Rachael undertook in the European Alps for her dissertation and highlights how resorts are introducing a range of measures to prolong the ski season including glacier blankets and artificial snow.

BSc (Hons) Geography graduate Rachael explained that "at university I developed a passion for understanding human interaction with the environment and the importance of climate change.

"I visited the Stubai Glacier in Austria on holiday and was intrigued by the fact that they were trying to conserve the ski industry. It left me asking lots of questions so I decided to go back and learn more."

The site uses protective blankets to reduce ice melting and wind erosion. It is also slowly transitioning from winter to summer tourism with new attractions including playgrounds and viewing platforms.



Special blankets are used by many resorts to conserve glaciers. Credit: Rachael Carver

Rachael surveyed tourists and, despite these [environmental changes](#), 70% said that they would return to the site if the glaciers were not there, citing mountains, scenery and hiking opportunities as reasons.

Resorts around the world are using similar strategies and many rely on snow machines. However, the use of most snow and ice generation and conservation measures are caught up in a loop of unsustainability, consuming energy that contributes to climate change.

Rachael said: "At the rate we're losing glaciers, doing nothing is not an option for these industries. There will be a lot of people adversely

affected by the economic impact of not having this tourism.

"It was interesting seeing different solutions to the issue. Most places understand that these practices aren't a long-term solution, but it is buying them time.

"I think adaption is key. Yes, they were designed as [ski resorts](#) but they can be turned into something else with a little bit of foresight and planning."

Rachael believes that resorts should provide visitors with opportunities to explore mountain environments in different ways; for example, by introducing hiking routes, mountain bike trails, viewing platforms and educational attractions.



Professor Fiona Tweed is an expert in glacial processes and natural hazards.
Credit: Fiona Tweed

The article also explores more innovative solutions such as grass skiing which has been introduced by resorts in the Czech Republic where there

is often only one month of reliable snow each year.

Fiona, Professor of Physical Geography, said: "It was a pleasure to collaborate with Rachael to get her undergraduate research published. I worked with her as I would any research co-worker; we drafted an outline plan together and had regular meetings to review progress and share ideas.

"Climate change is the defining issue of our time with many far-reaching impacts and implications. Several students in Rachael's year group did projects that had climate change at their core. We're looking forward to equipping more students with the skills to work on [climate](#) change related issues as part of our new BSc (Hons) Climate Change and Society degree."

After completing her degree with first-class honors Rachael now works as a Geospatial Technician with the Coal Authority.

She added that "having my dissertation research published is something that I never imagined would happen! I feel really privileged to have had Fiona help me—she has been a great support and is the one who made me go for it.

"My lecturers also helped motivate me to do a Masters degree and supported me in applications for jobs which led to my current role at the Coal Authority."

More information: Rachael E. Carver et al, Cover the ice or ski on grass?, *Geography* (2021). [DOI: 10.1080/00167487.2021.1970926](https://doi.org/10.1080/00167487.2021.1970926)

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