

This is Wisconsin Water News, a production of the University of Wisconsin Sea Grant Program. I'm your host, Marie Zhuikov. Today's episode is:

Climate change creates uphill battles at downhill ski areas in Wisconsin

Wisconsin ski hills face multiple challenges due to changing snow conditions from climate disruption, plus changes in skier behavior. However, Wisconsin researchers found that the state's ski operators are adapting to meet these challenges. Their study was published in the journal, "[Environmental Research Communications](#)."

During the summer of 2023, Austin Holland, an assistant professor with a joint appointment in the College of Natural Resources and the Center for Land Use Education at UW-Stevens Point and the Division of Extension Natural Resources Institute at UW-Madison, conducted confidential interviews with 25% of the state's ski hill operators.

From these interviews, Holland discovered that the changing climate, which includes warmer and wetter winters, has shifted the skiing season to later in the year and shortened it. Instead of opening in November and closing in April, hills are now operating from December to March or April. The inconsistency and volatility of weather also makes managing ski hills more challenging. Many interviewees described instances where they made artificial snow only to have temperatures rise quickly above freezing, followed by rain, which melted the snow or degraded the quality of the ski runs. These weather patterns also required more employee labor to maintain runs.

Natalie Chin, Wisconsin Sea Grant climate and tourism outreach specialist and study co-author, said that two adaptations by ski hill operators include snowmaking and subscribing to meteorological data services.

"Snowmaking is a necessity now if you're operating a ski hill in the Midwest. Even though folks started investing in it a while ago, it's now become something standard."

However, increased snowmaking often requires additional equipment. Other adaptations include adding more revenue-generating opportunities in the offseason, like event rentals for weddings and mountain biking.

Natural snowfall and winter conditions are the main things that drive skiers to the hills. If the weather doesn't feel like winter, they are less likely to participate in winter activities. This is called the "backyard effect." In other words, if skiers don't see snow in their backyards, they lose interest in skiing and assume that ski hills aren't open.

Holland said skiers need to understand that, due to investments in snowmaking:

"it could be a little bit warmer than you might expect to go skiing, but you can go skiing."

Methods to combat the backyard effect involve social media and marketing strategies. Others include livestreams and posting ski condition reports.

Despite concerns about climate change, Chin said that most study participants felt positive about the future of downhill skiing.

“Folks in the ski industry are strongly connected. So, while they’re not necessarily cooperating, they can communicate with each other and talk to each other about the challenges that they’re facing and try to navigate those together, which is beneficial for everybody.”

A report from Headwaters Economics showed that snow activities accounted for nearly 84 million dollars in gross domestic product in Wisconsin in 2022. Holland stressed the importance of a good winter.

“Winter recreation in Wisconsin is really embedded in what people do here. Everyone has something they do in the winter, whether it’s fat tire biking, or ice fishing, or hunting, or hiking, snowshoeing, cross-country skiing, downhill skiing. It’s part of how people live their life here and has a bunch of different health, mental health and physical benefits, along with tourism stuff.”

Hannah Higgins, a student researcher, contributed to the ski hill study, and input was provided by the [Wisconsin Initiative on Climate Change](#) group. The study was collaboratively funded between Wisconsin Sea Grant and the Center for Land Use Education.

This study is just the beginning. Holland and Chin are discussing looking more broadly at winter recreation, what climate impacts are being felt, and what winter industries need to do to adapt and prepare. For example, Chin and Holland recently worked with a UW–Stevens Point student to create an [interactive story map](#) that outlines regional climate impacts on tourism in Wisconsin.

That’s it for this episode of Wisconsin Water News, just one of the ways that Wisconsin Sea Grant promotes the sustainable use of Great Lakes resources through research, education and outreach. Listen and subscribe to us through Spotify, I-Tunes and YouTube or at seagrant.wisc.edu. Thank you to Austin Holland and Natalie Chin, and thank you for listening.