

Climate Change at Ski Resorts in Utah

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Snowpack, snow quality, and season length are all decreasing across Utah's 14 ski resorts.

Utah's Champagne Powder – Still Steep But Not So Deep

As the days of deep powder diminish, Utah's ski resorts explore new ways of doing business as they adapt to climate change.

Utah's winter playgrounds may look a little different in the future. If the number of days suitable for skiing continue to decline, Utah skiers and snowboarders may find themselves recreating in other ways on the mountain. In a new study published in Mountain Research and Development, a team of Utah State University researchers working out of the Climate Adaptation Science program, report minimum daily temperatures are rising at faster rates in most Utah ski resorts, and as a result, snowpack, snow quality, and season length are likely decreasing. Through interviews with resort managers, researchers also found many resorts are considering or are already using proactive adaptive strategies to offset the negative impacts caused by climate change.

Between the years 1980 to 2018, average minimum daily temperatures during the ski season at Utah's 14 resorts increased by at least 2.6°C and as much as 6.7°C. The study found that under future climate conditions in which greenhouse gas emissions remain high, minimum daily temperatures in the winter could increase another 6.0°C at northern Utah resorts and 6.6°C at southern Utah resorts by 2100. Such climatic setbacks are likely to shorten the ski season length, which can directly affect the

bottom line, particularly when skiing around the holidays is interrupted. Snow quantity and snow quality are critical.

From the interview sessions with ski resort managers, the primary concerns reported were shorter season lengths, shifts in the season, and less snow cover. Managers also shared their thoughts about different adaptive strategies that could potentially offset the negative impacts from climate change at their resorts. Many resorts have already employed adaptive measures to keep the best slopes open and revenues flowing through snowmaking, joining ski conglomerates, and increasing lift capacity. Offering a wider array of winter-time activities and all-season recreation options were also commonly reported adjustments.

Managers commented on what they thought were the biggest barriers to making such adjustments at their resort. The cost of implementing adaptive strategies was at the top of the list, as well as not having adequate water for snowmaking, and uncertainty about weather and climate projections. Shifts in the ski/snowboard season may be coming,

Emily Wilkins, lead author and researcher with the [Institute of Outdoor Recreation and Tourism \(IORT\)](#), stated, "Climate change will continue to increase temperatures at Utah ski resorts, which means more precipitation will fall as rain rather than snow. Although many Utah resorts have the ability to make snow, the proportion of the winter season where snowmaking is possible is also decreasing as temperatures warm."

Ski resorts are a critical component to many Utah communities and local economies. Fortunately, Utah ski resort managers are aware there will likely be warmer days ahead and are already thinking about ways to adapt and enjoy a viable future. However, having both the skis and mountain bike at the ready during winter, and always keeping an eye on that weather report, is probably a good plan.

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