

# Snowmaking guarantees there will be a ski season in Tahoe

By Hugo Martin, Los Angeles Times

Mother Nature has been a fickle manager of snowfall lately, sending an avalanche of powder to ski resorts across the country two years ago, followed by the least amount of snowfall in decades last winter.

Even with the major snows of recent weeks in the Sierra, it's too early to tell if this season will be a snowy success or another dry disappointment.

But ski resort managers are losing less sleep over erratic weather conditions after making a flurry of investments in the past few years in ultra-efficient, computerized snow-making equipment.

Once powered by diesel air compressors and monitored by workers on snowmobiles, today's snow-making systems rely on computers, fiber-optic cables and low-energy fans that can be controlled by smartphone or programmed to automatically make snow when conditions are prime.

The good news for powder hounds is that the frozen spray generated by modern snow-making equipment is so close to real snow that even veteran skiers can't tell the difference.

"If I'm going down a run, I can't tell you if I just skied on natural or man-made snow," said Bruce Lee, a Redondo Beach resident who has been skiing for 30 years in Vermont, Pennsylvania, Utah, Colorado and California. "I'll bet no one can tell the difference."

Investments in snowmaking have been especially crucial in California, where snowfall has always been particularly

unreliable. The state is home to 29 resorts that generate an estimated \$1.3 billion in spending a year.

Last year's ultra-dry season only reinforced the value of artificial snow-making systems. The 2011-12 season marked the lowest national average snowfall in 20 years, forcing half of the nation's resorts to either open late or close early.

The National Resources Defense Council estimates that ski resorts lost \$1 billion in revenue because of meager snowfall in the past decade.

Resort operators that had already invested heavily in snowmaking equipment said man-made snow helped them avoid a complete bust.

"For us, the reaction to last year was, 'Thank God we've done what we did in the past,'" said Pete Sonntag, general manager at Heavenly Mountain Resort, where 155 snow-making machines can cover 65 percent of the resort's skiable terrain.

Heavenly's snow-making system – the largest on the West Coast – can be controlled from a desktop computer at a pump house on the mountain or a smartphone carried by Barrett Burghard, the resort's senior manager for snow surfaces.

"I'm not going to lie and say we can make snow as good as Mother Nature," Burghard said as he glanced at a computer screen to check the water levels in the resort's storage tanks. "But it's close."

The best man-made snow, he said, is light and can be pressed into a snowball without oozing water.

He has another, very unscientific method for testing his machine-spewed snow: He tosses it against his arm to see how it bounces off his sleeve. "There's an art to making snow," Burghard said.

In the past, snowmaking was a labor-intensive task that

involved teams of workers taking temperature and humidity readings throughout the night.

If the conditions were right for snowmaking, workers would ride snowmobiles up the mountains to switch on snow guns, which were often powered by diesel air compressors and connected to high-pressure air and water hoses bordering ski runs.

But temperatures at different spots on a mountain can vary by several degrees, making it difficult for resort operators to gauge when and where to activate the snow guns.

Modern snowmaking guns use less energy than older systems, relying on a combination of portable compressors and energy-efficient fans.

They also have built-in computers that take on-site temperature and humidity readings, which are sent to a central computer via radio waves or fiber optics. That enables them to be controlled remotely, allowing resort operators to begin making snow as soon as conditions are right. They can also program the guns to switch on automatically even when no one is monitoring the system.

These high-tech snow guns are expensive, up to \$50,000 each. But the payoff is better snow.

"The snow is more consistent with the new machines," said Jim Larmore, director of mountain operations at Northstar, which added nearly 100 snow guns last summer. "The product is so much better. When you ski on it, the snow is soft, and when you push your edge into it, it carves."

In the mountains above Lake Tahoe, the owners of Squaw Valley and Alpine Meadows spent \$4 million on snow-making equipment last summer. The two resorts can now cover almost 30 percent of their skiable terrain with man-made snow.

“Every chance we have to make snow, we are making it,” said Andy Wirth, president and chief executive at Squaw Valley. “It’s pedal down.”

In the San Bernardino Mountains, the managers of the Snow Summit and Bear Mountain resorts have invested about \$12 million in new snow-making equipment over the last eight years, enough to coat every run on both resorts with a layer of snow.

“We are ahead of many mountains in the West because we have 100 percent of our runs covered,” said Chris Riddle, a spokesman for the resorts.

Even in Colorado, where natural snow is more abundant, some resort owners have invested in new snow-making equipment as a hedge against future dry seasons. Over the last three years, for example, the Breckenridge Ski Resort in Colorado added more than 150 energy-efficient snow guns.

Some ski resorts that are blessed with heavy annual snowfall have not made big investments in snow-making equipment.

“We look to Mother Nature to provide for us,” said Stephen Hemphill, spokesman for Sierra-at-Tahoe. The 2,000-acre resort gets an average of 480 inches of natural snow a year.

Whether it’s man-made or natural snow, skiers who endured last year’s dry snow season say they are grateful to have anything that lets them fly down the mountain.

“The more snow the better,” said Jane Ferry, membership director of the Santa Barbara Ski and Sports Club and a skier who has visited mountains throughout the West. “I don’t care where it comes from.”