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MMSA Earth Day Celebration Links Wild Weather to Resource Use

MAMMOTH MOUNTAIN, CA – Changing weather patterns were a hot topic last Tuesday, April 22, at Mammoth Mountain Ski Area. At a time of the year when warm, sunny weather is the norm, an unexpectedly cold storm drove skiers and boarders inside where many then flocked to the Earth Day booth in the Main Lodge to learn more about the theory of Global Warming and changing weather patterns. And with many ‘cool’ Earth Day gifts provided by Mammoth Mountain Ski Area, the Town of Mammoth Lakes, National Resources Defense Council, Clif Bar, Simple Green and Banana Boat Suncare, everyone learned something and no one walked away empty-handed.

Staff members from Mammoth Mountain’s Department of Environmental Programs were on hand to pass out gifts in honor of the 33rd annual Earth Day and discuss global climate change with guests and employees, focusing primarily on the causes and potential results of greenhouse gas build-up in the earth’s atmosphere. In consideration of the day’s weather, a main point of discussion was explaining that “Global Warming” does not strictly mean increasing temperatures, but also an increase in abnormal climate fluctuations and temperature changes (hotter or colder), often accompanied by severe storm systems.

The National Ski Areas Association has targeted warming weather patterns as a major threat facing the ski industry, leading to its *Keep Winter Cool* campaign designed to educate resort guests about global warming; what it is, how it could affect resorts and how guests and employees can help reduce the causes. Understanding the potential severity of the situation, Mammoth Mountain chose to celebrate Earth Day this year by highlighting *Keep Winter Cool* and encouraging everyone to do their part in reducing greenhouse gas emissions associated with climate change.

What is *The Greenhouse Effect*?

Greenhouse gases (GHGs) are large molecule air pollutants building up in the atmosphere and holding in too much of the sun’s heat, thereby causing the earth’s surface to warm beyond what is natural. Like a greenhouse, the earth’s atmosphere is meant to trap heat, making life as we know it possible, but most scientists now believe that human-caused air pollution is rapidly building up the atmospheric gas walls and effectively changing the global climate.

Although earth temperatures fluctuate naturally, the increase in temperatures over the past 50 years has

been the fastest in history according to the National Resources Defense Council. And experts think the trend is accelerating. Scientists say that unless GHGs are reduced, average U.S. temperatures could be five to ten degrees higher by the end of the century. According to NASA, 2002 was the second warmest year on record, right behind 1998 and just ahead of 2001. To ski areas, such temperature increases can mean the difference between snow or rain.

The science of the greenhouse effect is well understood and accepted throughout the scientific community. Researchers can now accurately predict the level of warming that results from increased GHGs in the upper atmosphere and have identified carbon dioxide (CO₂) as the principle GHG. According to recent research, the levels of CO₂ are rapidly increasing and will be double that of pre-industrial times by 2100. In fact, the atmospheric levels of CO₂ are as high as they've been in half a million years, based on glacial ice core measurements. What the scientific community doesn't agree upon, however, are the consequences of global warming; precisely what will happen to weather patterns, crop yields, regional temperatures and rainfall amounts.

In addition to CO₂, other notable GHGs include methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons and perfluorocarbons. By far, the main sources behind the creation of these emissions are industrial manufacturing and power plants, fossil fuel engines and residential / commercial buildings. And while ski resorts contribute relatively negligible amounts of GHGs, the danger posed to the industry is very real.

In an effort to combat this looming threat, Mammoth Mountain and other North American ski areas are encouraging guests and employees alike to make lifestyle changes that result in fewer GHG emissions, such as riding mass transit, carpooling, driving fuel-efficient vehicles, purchasing energy-efficient appliances, and including energy efficiency in building designs.

What is Mammoth's role?

Several new projects are currently under development at Mammoth Mountain to help reduce the production of resort-related GHGs. The cleaner burning alternative fuel B20 biodiesel (a blend of 20 percent biofuel made from vegetable oil and 80 percent traditional diesel) is being tested in off-road vehicles for potential use throughout Mammoth's operations. Biodiesel has been gaining in acceptance and use within the past decade due to its lower air emissions and decreased environmental impacts caused by crude oil exploration and production. And while there typically isn't any noticeable change in power or fuel economy when using B20, the EPA recently reported that it can reduce emissions of unburned hydrocarbons by 20 percent over standard diesel, as well as a 12 percent reduction of both carbon monoxide and particulate matter (a major health concern in the Eastern Sierra region).

ClearDome Solar and Mammoth Mountain are also partnering to test heating on-mountain lift huts with solar thermal panels. Unlike many other ski resorts and mountain communities, Mammoth Mountain enjoys about 300 days a year of sunshine, making it very well suited to systems that use the sun as an alternative power supply.

Mammoth Mountain's Energy Management Program has also made a big dent in total energy use. Extensive audits have been conducted on most building and new meters installed, leading to notable savings throughout. Bob Bradbury, Mammoth's Energy Manager, explained, "Where you can touch it and measure it, you can reduce it." To date, some of the most dramatic savings include a 59 percent reduction over the amount of propane used at the Main Lodge during the 2000-01 ski season and a 50 percent reduction at the Mill Cafe. Many other energy-cutting efforts are underway, including installing 100 motion sensors in buildings to turn off lights that previously remained on 24 hours a day, replacing incandescent bulbs with compact fluorescents, and placing timers on other lights and devices that do not need to remain on when not in use. Installing new electric meters on buildings where previously the metering and costs were lumped together for whole complexes has also had a significant impact on savings. According to Bradbury, pushing the energy cost of the building to its manager has resulted in close scrutiny and significant savings. "This system is so precise that we can tell if lights were left on in that building overnight," Bradbury noted.

For more information about Mammoth's Earth Day programs or ongoing energy management efforts, please contact Mammoth Mountain Ski Area's Department of Environmental Programs at (760) 934-0773.

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