

Los Angeles Times



<http://www.latimes.com/news/nationworld/nation/la-na-pink-snow24-2009may24,0,1077488.story>  
 From the Los Angeles Times

## Dust storms speed snowmelt in the West

**An unusually high number of the storms has left a film of dust on the Rocky Mountain snowpack, causing it to melt earlier and forcing farmers to adjust. This could be the new normal, scientists say.**  
 By Nicholas Riccardi

May 24, 2009

Reporting from Denver — A series of unusual spring dust storms has left the snowcapped mountains of western Colorado stained brown and red, even a bit pink. The dust is speeding up the runoff to rivers that supply millions of people with water and raising fears of an increasingly arid West.

Twelve dust storms barreled into the southern Rockies from the deserts of Arizona, Utah and New Mexico so far this year. In contrast, four storms hit the mountains all year long in 2003. Eight occurred in each of the last three years.

"This year's been really, really strong," said Jason Neff, a hydrologist at the University of Colorado-Boulder. "Something's been going on, and I don't think we're exactly sure what."

The storms leave a dark film on snow that melts it faster by hastening its absorption of the sun's energy. That, coupled with unseasonably warm temperatures, has sped up the runoff here, swelling rivers to near flood stage, threatening to make reservoirs overflow and fueling fears that there will not be enough water left for late-summer crops.

"It creates a high-pressured game of Twister for water managers," said Thomas Painter, director of the Snow Optics Lab at the University of Utah. "They're having to make decisions quickly to hold on to water or release water."

Painter has found that dust can speed up snowmelt by as much as 35 days -- in other words, snow that would normally disappear by May 15 would instead be gone by April 10.

Ever since European settlement of the West, there has been dust, caused by outside forces breaking the fragile crust that holds undisturbed desert soil in place. Initially, grazing cattle kicked up the dust. Scientists say it is now more likely to be caused by off-road vehicles, mountain bikers or energy exploration. In a study last year, Neff found that the amount of dust in the Rockies is five times greater than before the late 19th century.

"This is really the story of the wholesale transformation of the West," Painter said.

Even without the dust storms, forecasters predict that global warming will reduce the soil quality in the western United States to dust-bowl levels by 2050, said Jayne Belnap, a scientist with the U.S. Geological Survey. The Southwest's temperatures are expected to rise by 10 degrees Celsius by 2100.

"It's just a harbinger of the future," Belnap said of the dust storms. "This is the kind of world we need to imagine we're going to be living in and decide if we can afford this dust."

Dust and soot are contributing to the disappearance of mountain snows and the disturbance of water supplies all over the world. The Asian "brown cloud" rising from that continent's megalopolises is blamed for speeding up the melting of glaciers and snow in the Himalayas. Dust blown from the plains of eastern Africa is helping destroy the snows of Mt. Kilimanjaro.

In California, the Sierra Nevada snowpack gets some soot from Asia and from the state's own smog-emitting centers, but little dust. State officials have begun to study whether that soot could be contributing to a sped-up snowmelt that, if it continues unabated, could someday overwhelm the reservoir system.

Because winds in the western United States blow from the southwest, dust from the deserts of California, the Great Basin and the Colorado plateau is deposited on the southern Rockies.

The amounts of wind-blown dust in the West peaked in the 1920s, reaching seven times the historic norm. Scientists think the level of dust dropped after Congress sharply limited cattle grazing in 1934, near the height of the Dust Bowl.

Today, levels are five times the historic norm.

It is only recently that scientists have begun to study dust's effect on snow and water supplies. Painter and his colleagues only started tracking storms in 2003. "We haven't thought about dust as a serious environmental issue," Neff said.

This year's storms put the issue front and center, especially the final three, which swept through southeastern Utah and southwestern Colorado within a few days of one another in late March and early April. Mountains that usually remain snow-covered until midsummer are already almost bare along the entire western stretch of Colorado.

"We've seen several days with just incredible obstruction in the air," said Steve Vandiver, general manager of the Rio Grande Water Conservation District, 7,500 feet high in the San Luis Valley of southern Colorado.

Now the snowmelt is about 20 days early, and Vandiver's system is on the brink of flooding.

He said some farmers and ranchers who rely on streams that normally run all summer long will be without water. "This whole system was built around the runoff coming pretty much as the crops came up," he said.

The dust left its smear on a number of Colorado's storied ski resorts, leading to grouching by some skiers about slushier, dirtier snow.

Jeff Hanley, a spokesman for the Aspen Skiing Co., said that as long as slopes were being groomed the dust was not a problem.

"It didn't affect our operations. It just looked kind of funny," he said. "You'd ski and turn around and look at your tracks and they'd be red chocolate."

He said the industry is not worried -- yet. "If it's going to be a regular thing for the next few years, that's one thing, but we don't know that yet."

But some scientists note that the West has ended an unusual, 50-year wet period and is returning to its normal, more arid state.

Belnap, the USGS scientist, said that the sort of activities that kick up dust may not be increasing -- they just may be more damaging because conditions are drier.

"We've been talking about this for 20 years, but it's been wet and we've had a lot of plants" helping to hold the soil down, Belnap said. "It's not necessarily that everyone's doing more. You've suddenly got a drier surface."

[nicholas.riccardi@latimes.com](mailto:nicholas.riccardi@latimes.com)

---

If you want other stories on this topic, search the Archives at [latimes.com/archives](http://latimes.com/archives).

**TMSReprints**

Article licensing and reprint options

Copyright 2009 Los Angeles Times | [Privacy Policy](#) | [Terms of Service](#)  
[Home Delivery](#) | [Advertise](#) | [Archives](#) | [Contact](#) | [Site Map](#) | [Help](#)

partners:  