



# Colorado Climate

Winter 2001-2002 Vol. 3, No. 1

Colorado  
State  
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*Knowledge to Go Places*

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*Cover Photo: Group of spruce and fir trees in Routt National Forest near the Colorado-Wyoming Border in January near sunset. Photo by Chris Hiemstra, Department of Atmospheric Science, Colorado State University.*

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# Stump the Climatologist

## Question: Why is it so windy in Huerfano County?

Submitted by Jim Conley, Huerfano County Cooperative Extension Office

**A**nswer: Episodic strong winds are a part of life for all areas in the immediate lee (just east of) the high Rocky Mountain chain. Most of these strong winds are relatively brief but severe associated with rapidly descending air cascading over the crest of the Rockies and racing out to the plains.

These “Down-Slope Wind storms” are most common from late autumn into spring and accompany travelling upper level disturbances in the strong wintertime jet stream. Fort Collins, Boulder, Denver, Colorado Springs and Pueblo are all prone to these windstorm events.

There are a few “preferred” areas that see strong winds much more commonly. Particular topographic features along the Front Range of the Rockies make certain areas more prone to strong winds than others. Portions of Huerfano County are in one of those wind zones.

There are three topographic features of your area that work together to produce a “wind tunnel.” A clue to this tunnel is the location of the Great Sand Dunes. The long, relatively straight and broad valley of the Huerfano River happens to run parallel to the strongest upper level winds that blow over the Rockies in the winter. The bend in the Sangre De Cristo Mountains (and the protruding Blanca Peak massif) channels

the winds toward Mosca Pass. Mosca Pass provides a low pass for the concentrated winds to blow through. Then, on the eastern side is a long, broad and straight valley headed straight for the open plains. And that she blows!

This is not a year-round wind tunnel. From late spring through mid autumn when upper level winds are light, the Huerfano County winds are not strong. But as long as the upper-level “Westerlies” are blowing, your wind tunnel will often be working. One of the benefits of these winds are markedly warmer winter temperatures. Compare temperatures at Westcliffe to those of Gardner on a breezy winter morning. The difference can be huge – as long as you don’t consider the wind chill effect.

Under certain circumstances winds can reverse and blow up the valley. When easterly “upslope” winds blow, the Huerfano valley becomes a preferred location for heavy snows. In the summer, upvalley winds create preferred locations for thunderstorm development. The wettest areas in Colorado in July and August are often found in the Wet and Sangre de Cristo Mountains where these upslope easterly daytime winds converge with monsoonal winds blowing up from the south or southwest at mountain top level.

Thanks for a good question.

Nolan Doesken

*If you would like to submit a question for the Climatologists to answer, send it to [odie@atmos.colostate.edu](mailto:odie@atmos.colostate.edu)*

*Topographic view of Mosca Pass in the Sangre De Cristo Mountains. Drawing courtesy of Christopher Hiemstra.*

