

## GNFAC Avalanche Forecast for Fri Dec 16, 2011

Good morning. This is Mark Staples with the Gallatin National Forest Avalanche Advisory issued on Friday, December 16 at 7:30 a.m. This advisory is sponsored by Montana Import Group in partnership with the Friends of the Avalanche Center. This advisory does not apply to operating ski areas

### Mountain Weather

Yesterday another 2-3 inches of snow fell in most areas except the southern Madison Range and the mountains near West Yellowstone which only got a trace. This morning temperatures were in the teens F and ridgetop winds were blowing 10-20 mph from the WNW. In the Bridger Range ridgetop winds were blowing 35-40 mph. Today will have sunshine and temperatures in the mid to high 20s F with little change in the winds. The next chance for snow may be Sunday evening.

Curious why La Nina hasn't brought more snow to SW Montana? Read a brief explanation from the National Weather Service office in Missoula [here](#).

### Snowpack and Avalanche Discussion

The Bridger, Gallatin and Madison Ranges, the Lionhead area near West Yellowstone and mountains around Cooke City:

One of the biggest factors affecting the avalanche danger is significant snowfall. Without much stress from new snow, there have been few avalanches. Although the snowpack is weak in most areas, it is generally stable because it has little stress. This situation will change if or when a big storm arrives, but for now the waiting game continues.

Weak layer #1: Snow in October provided beautiful images of fall with snow capped mountains in the background, but this snow has become a layer of weak, faceted crystals called depth hoar lying at the bottom of the snowpack. Avalanches in late November and early December occurred on this layer. Yesterday, my partners and I toured into the Flanders drainage of Hyalite Canyon. Along the way we dug multiple snowpits. In some places where the snow was deepest, this layer was less obvious. In many other places this layer was very obvious and very weak ([video](#)).

Weak layer #2: Recent dry weather created strong temperature gradients at the snow surface. This means the upper few inches of snow experienced big temperature differences which metamorphosed (changed) the old, broken snowflakes into small faceted crystals called near-surface facets. Additionally, many areas have a layer of surface hoar ([photo](#)) on top of these facets. Wednesday's snow covered and preserved both these layers ([photo](#)). Until more snow falls, these layers are not much of an avalanche hazard.

The current situation: Some slopes have a snowpack more than 2 ft deep with depth hoar at the bottom, a slab in the middle, and more facets on top. Other slopes have a snowpack less than 2 ft deep with depth hoar at the bottom, facets in the middle, and more facets on top ([video](#)). Avalanches require a slab resting on a weak layer. For this reason, slopes with more than 2 ft of snow and any wind deposited snow have a **MODERATE** avalanche danger. Slopes with less than 2 ft of snow and no wind loading have a **LOW** avalanche danger.

I will issue the next advisory tomorrow morning at 7:30 a.m. If you have any snowpack or avalanche observations, drop us a line at [mtavalanche@gmail.com](mailto:mtavalanche@gmail.com) or call us at 587-6984.

## EVENTS/EDUCATION

To check out all our education programs: <http://www.mtavalanche.com/workshops/calendar>

### BOZEMAN

Women's 1-hour Avalanche Awareness Lecture. Wednesday, January 4, 6:30- 8 p.m. at REI.

Snowmobiler Introduction to Avalanches with Field Course. Lectures on Saturday, January 7, with an all day field session Sunday, January 8. Advanced registration IS REQUIRED.

### CODY, WYOMING

Snowmobiler Introduction to Avalanches with Field Course. Lectures on Saturday, January 14 at Mountain Valley Motorsports with an all day field session near Cooke City on Sunday, January 15. Advanced registration IS REQUIRED.