

## GNFAC Avalanche Advisory for Fri Jan 7, 2011

Good morning. This is Mark Staples with the Gallatin National Forest Avalanche Advisory issued on Friday, January 7, at 7:30 a.m. Team Bozeman and Yamaha, in cooperation with the Friends of the Avalanche Center, sponsor today's advisory. This advisory does not apply to operating ski areas.

### Mountain Weather

Warm weather is the word this morning with temperatures mostly in the mid to high 20s F. Westerly ridgetop winds calmed slightly from yesterday blowing 10-25 mph near Bozeman and 5-15 mph elsewhere. Yesterday afternoon some areas received a brief shot of freezing rain followed by a dusting of snow. More precipitation should come this afternoon possibly starting as rain before changing to snow. By tomorrow morning 2-3 inches should accumulate with more on the way. Today will have high temperatures near 30 degrees F with westerly winds blowing 10-15 mph.

### Snowpack and Avalanche Discussion

#### The northern Madison Range:

Yesterday someone was caught in an avalanche on a W facing slope in Beehive Basin near Big Sky. Although she was not injured or buried, her snowboard broke upon impact with a tree. This avalanche was about 150 ft wide, 2-5 ft deep and occurred in a gully cross loaded with wind-blown snow. It didn't run very far, but the debris was 10 ft deep on a bench where the avalanche stopped. This group dug a snowpit on a similar aspect and performed a Rutschblock test with stable results, but they reported ignoring several key factors wanting to believe the slope was stable.

1. There was significant new snow.
2. There was significant wind loading on the slope from cross winds.
3. The snowpack structure was entirely different on the slope from what they saw in their snowpit.
4. The bench created a terrain trap where the debris ran into trees and piled 10 ft deep.

Additionally they reported a false sense of security from their snowpit and stability test results as well as seeing dropped cornices on the other side of the ridge (E aspect) without triggered avalanches. These factors seem obvious in hindsight but never are in the moment, and this avalanche provides a great lesson. I've been guilty of ignoring clues and always struggle with managing the human element of decision making especially when the riding is good.

Significant new snow and wind-blown snow adds stress to the snowpack pushing any weak layer to its breaking point. The most widespread weak layer near Big Sky has been buried surface hoar, about 2-3 ft deep. While this layer has gained strength on many slopes, it remains weak on others. Wind loaded slopes remain the primary concern. In most places avalanches will break within the new snow but can break on deeper layers as yesterday's avalanche demonstrated. Today the avalanche danger is rated CONSIDERABLE on all wind loaded slopes. All other slopes have a MODERATE avalanche danger.

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

Yesterday Eric and I went to the Taylor Fork area hunting for instabilities but we found more face shots than weak layers. A similar report came from skiers near Cooke City where they avoided obvious pillows of wind-blown snow, found no stability issues in their snowpits, and found waist deep powder. Stability evaluations through much of the advisory area (except for the mountains near Big Sky) are relatively simple and any weaknesses are not buried deeply. On a SW aspect, near Skyline Ridge, Eric and I found the strongest snowpit I've seen this year. On a NE aspect in Sunlight Basin, we found a layer about 12 inches down that only concerned us if it had the additional load of wind-blown snow.

Today the avalanche danger is rated:

[CONSIDERABLE](#) on slopes steeper than 35 degrees with a wind load

[MODERATE](#) on less steep slopes with a wind load OR steep slopes without a wind load

[LOW](#) on slopes less than 35 degrees without a wind load

Eric 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.

Avalanche Education

January 9, Sunday in Helena:

The Friends of GNFAC in cooperation with the Helena Snowdrifters snowmobile club will present a FREE avalanche seminar. The schedule will be as follows:

9am to 11a.m.: 1 hour avalanche awareness lecture; "Dozen More Turns" movie; 12-2 p.m.: Rescue lecture followed by beacon overview. The course will take place at the MACO Building at 2717 Skyway Drive in Helena. For more information : <http://www.mtavalanche.com/workshops/calendar>

January 11, Tuesday in Big Timber:

In partnership with the Sweetgrass County High School in Big Timber, the Friends of the Avalanche Center will offer a FREE Basic Avalanche Awareness Workshop at the Big Timber High School between 7-8 p.m.

January 12, Wednesday in Billings:

The Friends of the Avalanche Center in partnership with Families for Outdoor Recreation will offer a FREE Basic Avalanche Awareness Workshop and beacon demonstration at Hi Tech Marine in Billings, MT between 6-8:30 p.m.

January 12, Wednesday in Dillon:

In partnership with the Birch Creek Center at UM Western in Dillon, MT, the Friends of the Avalanche Center will offer a FREE Basic Avalanche Awareness Workshop in Block Hall, Room 311 on the campus of UM Western at 7-8 p.m.

For additional information and a listing of other avalanche classes, go to:

<http://www.mtavalanche.com/workshops/calendar>