

## **GNFAC Avalanche Advisory for Sat Jan 8, 2011**

Good morning. This is Eric Knoff with the Gallatin National Forest Avalanche Advisory issued on Saturday, January 8, at 7:30 a.m. Gallatin County Search and Rescue, in cooperation with the Friends of the Avalanche Center, sponsor today's advisory. This advisory does not apply to operating ski areas.

### Mountain Weather

In the past 24 hours, 3 inches of heavy, dense snow has fallen in the Bridger Range, 2-3 inches has fallen in the mountains around Cooke City, and a trace to an inch has fallen elsewhere. Mountain temperatures are in the mid to high 20s and winds are out of the WSW at 10-20 mph. Today, temperatures will top out around 30 F, but will gradually cool off by this evening as a cold front moves in from the north. Winds will increase from the west as the front approaches, reaching speeds up to 30 mph by this afternoon. Accumulations of 2-4 inches will likely fall throughout our advisory area today, with an additional 2-4 inches falling tonight into tomorrow.

### Snowpack and Avalanche Discussion

#### The northern Madison Range:

Buried surface hoar remains an issue in the mountains around Big Sky. Yesterday, Mark and I investigated a human triggered avalanche that occurred on Thursday in Beehive Basin that failed on this layer ([video](#)). This slide was triggered on a WSW facing slope around 9,000 ft and failed on a layer of buried surface hoar 2' deep ([photo](#))([photo](#)). The snowboarder who triggered the slide was the third individual to descend the slope and luckily was not buried or injured. The rider set off the slide on a heavily wind loaded roll - a feature the previous two riders had avoided.

Prior to riding the slope on which the slide occurred, this group dug a snowpit on a similar aspect which produced stable results. This incident illustrates the characteristic of this surface hoar layer to exist in certain areas and not in others - even varying on slopes with similar aspects and elevations. The group was using proper backcountry procedures, carrying rescue gear, traveling one at a time and watching one another from safe locations. Using this protocol likely prevented this situation from becoming a more dangerous avalanche incident.

With conditions like these paying close attention to high probability areas, mainly any slope with wind deposited snow, is important. Although wind loaded slopes remain our primary avalanche concern, triggering a slide in non-wind loaded terrain is possible. Yesterday skiers on Yellow Mountain experienced a large collapse on a non-wind loaded, forested slope; an obvious sign buried surface hoar was present in the snowpack. This clear sign of instability altered the groups skiing plans for the day, a wise decision.

With more snow and wind forecasted over the next few days, the weak snowpack of the northern Madison range will be put to the test. In most places avalanches will break within the new snow but can break on deeper layers as Thursday'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:

The snowpack outside of the northern Madison Range lacks persistent weak layers and is generally stable, with the exception of wind loaded slopes. Yesterday, the Bridger Bowl ski patrol triggered multiple avalanches while doing control work in the Slushman's area. These slides were confined to recently wind deposited snow, but did break over 2 feet deep in some areas. One slide ran over 800 vertical feet, propagated over a lower angled slope, and pulled out other pockets of wind deposited snow as it ran. This type of activity will mainly be confined to steep, wind loaded slopes near ridgelines, but cross loaded slopes at lower elevations have the potential to produce avalanches as well.

Outside of wind loaded terrain, triggering an avalanche will be more difficult, but not impossible. On Thursday, Mark and I rode in the Taylor Fork and found a layer 12 inches down on a NE facing slope that propagated in out stability test. Although this layer was not a major concern at the time, with more snow and wind over the next few days, this layer could become more active.

Today human triggered avalanches remain likely on wind loaded slopes steeper than 35 degrees where the avalanche danger is rated [CONSIDERABLE](#). On less steep, wind loaded slopes OR steep slopes without a wind load, the avalanche danger is rated [MODERATE](#). Generally safe avalanche conditions can be found on slopes without a wind load that are less than 35 degrees where the avalanche danger is rated [LOW](#).

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.

#### 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>