

## **GNFAC Avalanche Forecast for Fri Dec 24, 2010**

Merry Christmas Eve! This is Mark Staples with the Gallatin National Forest Avalanche Advisory issued on Friday, December 24, at 7:30 a.m. Team Bozeman and Yamaha, in partnership with the Friends of the Avalanche Center, sponsors today's advisory. This advisory does not apply to operating ski areas.

### Mountain Weather

Yesterday was a beautiful day to be in the mountains, and it looks like Santa won't need Rudolph to guide his sleigh tonight as dry weather should continue. This morning temperatures were in the high teens F and westerly winds were blowing 5-15 mph. Today will see lots of sunshine as temperatures warm to near 32 degrees and winds will remain light. The Grinch can't steal Christmas, but it looks like he took our snowfall for the moment. Measureable snow accumulations shouldn't come until early next week.

### Snowpack and Avalanche Discussion

#### The northern Madison Range:

The mountains around Big Sky have a layer of surface hoar buried 1-1.5 ft deep that formed over two weeks ago. Strong westerly winds destroyed it on some slopes, but it survived on many others. Yesterday while hiking along the ridge between Beehive and Middle Basins, I experienced widespread collapsing and cracking ([photo](#)), and two days ago a skier remotely triggered an avalanche about 1 ft deep on this surface hoar layer. A remotely triggered avalanche is one triggered by simply approaching a slope without getting on it. These are serious signs of instability indicating the extreme weakness of this surface hoar layer. On some slopes the slab resting on this layer isn't quite stiff enough to create an avalanche, but the difference between just and not quite enough of a slab for an avalanche is very difficult to gauge and the margin is very thin.

The best strategy for today is to find a slope where the surface hoar doesn't exist, but this is not easy. Last Sunday Doug and Eric were in MacAtee Basin near Buck Ridge. They dug a snowpit on an exposed slope above treeline where they were certain the wind had destroyed the surface hoar. They were wrong and very surprised ([photo](#)) ([video](#)) when they found it under a hard wind slab. Surface hoar is notorious for surviving where you least expect it and has caused many avalanche accidents and fatalities. With the widespread existence of this layer and obvious signs of instability, today the avalanche danger is rated [CONSIDERABLE](#).

#### The mountains around Cooke City and the Washburn Range:

The snowpack near Cooke City also has a widespread weak layer. In this case it is a thin layer of facets buried 2-3 feet deep. Early this week heavy snowfall tested this layer, and natural avalanches ([photo](#)) occurred on it, as well as others involving fresh wind slabs. Since then, this layer of facets has adjusted to the new load. The good news is that stability tests showed it was gaining strength and losing its ability to propagate fractures. The bad news is that this layer exists on every slope, thus every slope has the right ingredients for an avalanche. Make sure everyone rides one at a time and parks in safe zones because human triggered avalanches are a very real possibility, and today the avalanche danger is rated [MODERATE](#).

#### The Bridger Range, the entire Gallatin Range, the southern Madison Range, and the Lionhead area near West Yellowstone:

The snowpack in all other areas besides Cooke City and Big Sky lacks widespread weak layers. Yesterday Doug and Eric rode into Teepee Basin in the southern Madison Range where they couldn't find any notable weak layers like surface hoar. However, isolated areas do have notable weak layers. Just a few miles north near the Bacon Rind drainage Doug found buried surface hoar on Tuesday, and skiers found buried surface hoar near Flathead Pass in the Bridger Range on Wednesday. Weak snow has also been found on the west side of the Bridger Range. Without any significant loading from recent snow, these isolated areas cause little concern, but they do mean human triggered avalanches are possible. Today on slopes steeper than 35 degrees the avalanche danger is rated [MODERATE](#), and [LOW](#) on less steep slopes.

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

Avalanche Awareness for Snowmobilers and Skiers, West Yellowstone, Holiday Inn;

Lectures: Saturday, January 1 from 12-5 p.m.; Field: Sunday, January 2 all day.

No Registration Required. ([more information](#))

There are many upcoming avalanche classes in the month of January. Check them on our education page at: <http://www.mtavalanche.com/workshops/calendar>