

## **GNFAC Avalanche Advisory for Fri Dec 30, 2011**

Good morning. This is Mark Staples with the Gallatin National Forest Avalanche Advisory issued on Friday, December 30 at 7:30 a.m. This advisory is sponsored by Grizzly Outfitters and the Lone Peak Brewery. This advisory does not apply to operating ski areas.

### **AVALANCHE WARNING**

**ISSUED ON DECEMBER 30 2011 AT 5:00 pm**

The Gallatin National Forest Avalanche Center is issuing a Backcountry Avalanche Warning for the southern Gallatin and southern Madison Ranges, the Lionhead area near West Yellowstone, the mountains around Cooke City. Heavy snowfall and high winds are causing unstable conditions. Today the avalanche danger is HIGH on all slopes. Areas of unstable snow exist. Natural and human triggered avalanches are likely. Avalanche terrain including avalanche runout zones should be avoided.

This warning will either be terminated or updated by 6:00 AM on December 31, 2011

### **Mountain Weather**

It snowed all day yesterday near Cooke City where an additional 12 inches of snow fell since yesterday morning. The Big Sky area and Hyalite Canyon received another 3-5 inches while further south near West Yellowstone and the Taylor Fork, the mountains received another 2-3 inches. The Bridger Range got a touch of rain yesterday and 1 inch of snow fell early this morning. Strong winds continued with gusts of 60-80 mph and steady 30-40 mph winds from the W and SW. This morning winds eased slightly and were blowing 25-40 mph from the SW. Temperatures were in the mid 20s F.

Snow was falling this morning at 4 a.m. and more will fall today and tonight. Guess which area will get the most snow? That's right, the mountains near Cooke City will get another 16-20 inches. Mountains near West Yellowstone will get 10-12 inches, and mountains near Big Sky and south of Bozeman will get 6-8 inches. In the Bridger Range there will be a tug-of-war between snowfall and downslope winds which tend to limit snowfall. It's hard to say who will win, but 2-4 inches should accumulate by tomorrow morning. Despite plentiful snow it may be hard to tell how much has fallen because winds will remain strong. Today they will blow steady at 15-20 mph gusting 40-60 mph from the SW. Temperatures will warm near 30 degrees F but a cold front moving over the area tonight will drop temperature into the single digits by tomorrow.

### **Snowpack and Avalanche Discussion**

#### **The Madison and southern Gallatin Ranges, the Lionhead area near West Yellowstone:**

The combination of new snow and very strong winds is always a good one to create avalanches. This combination is worse because most areas between Bozeman, Big Sky and West Yellowstone have a very weak snowpack. Yesterday I skied in the southern Madison Range near the Bacon Rind drainage. The weight of 5 inches of new snow pushed the snowpack just to its breaking point and we experienced subtle collapsing and cracking. Skiers near West Yellowstone experienced lots of collapsing and cracking, and snowmobilers near Cabin Creek observed several recent natural avalanches sliding on buried surface hoar. All areas have weak facets struggling to support the weight of new snow. Many but not all areas have an especially weak layer of buried surface hoar ([photo](#)).

With new snow, strong winds and more snow falling, I expect more avalanches. Strong W and SW winds have loaded many slopes where natural avalanches should occur. Today, human triggered avalanches are very likely on these wind loaded slopes which have a [HIGH](#) avalanche danger. These slopes as well as flat terrain under these slopes should be avoided. Non wind loaded slopes have a [CONSIDERABLE](#) avalanche danger which means that human triggered avalanches are also likely.

#### The mountains around Cooke City:

The mountains near Cooke City are in a league of their own where snowfall can be measured in feet instead of inches. In the past 48 hours, nearly 2 feet of snow has fallen (2" of [SWE](#)). Even though the snowpack in this area is much stronger than the rest of the advisory area, this amount of snow will find any weakness in the snowpack and produce an avalanche. More snow will come today with strong winds, and avalanches will certainly break within the new snow. Other avalanches will break deeper in the snowpack on a few slopes. Today all wind loaded slopes have a [HIGH](#) avalanche danger. The few slopes not affected by the wind have a [CONSIDERABLE](#) avalanche danger.

#### The Bridger Range and northern Gallatin Range:

A touch of rain fell yesterday morning in the Bridger Range and parts of the northern Gallatin Range like Mt Ellis. Hyalite Canyon received 4 inches of snow. These areas have a lower avalanche danger than other parts of the advisory area because they received less snow. The snowpack in the Bridger Range and places like Mt Ellis in the northern Gallatin Range is just as weak as it is further south. Rain that fell yesterday only makes matters worse. Hyalite Canyon is the one exception where a relatively strong and deep snowpack exists.

Yesterday's weather was weird for late December in SW Montana. Weird weather can make weird avalanches, so don't let your guard down even though these areas did not receive much snow. Today the avalanche danger is rated [MODERATE](#) but could easily rise to [CONSIDERABLE](#) if more snow falls and strong winds continue.

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.

[1-hr Avalanche Awareness Lecture](#). Wednesday, January 11, 6:30-7:30 p.m at REI.

#### BIG TIMBER

[1-hr Avalanche Awareness Lecture](#). Tuesday, January 10, 7-8 p.m at Big Timber High School.

#### HELENA

[1-hr Avalanche Awareness Lecture](#). Thursday, January 12, 6:30-8:30 p.m at Exploration Works.

## 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.

## BILLINGS

[Snowmobiler Introduction to Avalanches with Field Course.](#) Lectures on Tuesday, January 24 from 6-9 p.m at Hi-Tech Motor Sports with an all day field session in Cooke City on Sunday, Jan 29. PRE-REGISTER BY JAN 23 at Hi-Tech!! Register with Sharon at 406-652-0090; [hitech@hi-techmotorsports.com](mailto:hitech@hi-techmotorsports.com).