


## **GNFAC Avalanche Forecast for Sat Jan 21, 2012**

Good morning. This is Eric Knoff with the Gallatin National Forest Avalanche Advisory issued on Saturday, January 21 at 7:30 a.m. **Cooke City Motorsports & Yamaha** in partnership with the **Friends of the Avalanche Center** sponsors today's advisory. This advisory does not apply to operating ski areas.



The Gallatin National Forest Avalanche Center continues a **Backcountry Avalanche Warning for the Lionhead area near West Yellowstone and the mountains around Cooke City**. Heavy snow continues to fall on an extremely weak snowpack causing unstable conditions. **Today, natural and human triggered avalanches are likely and the avalanche danger is HIGH on all slopes**. Areas of unstable snow exist. Avalanche terrain including avalanche run out zones should be avoided.

### Mountain Weather

A strong westerly flow continues to usher pacific moisture into southwest Montana. Since yesterday another 4-6 inches of high density snow has fallen in the mountains around Cooke City and West Yellowstone while the mountains around Big Sky picked up an additional 2-3 inches. Unfortunately the mountains around Bozeman have remained dry.

At 4 am temperatures are in the mid to high 20s F and winds are blowing 20-30 mph out of the WSW with gusts in the 50s being recorded in the northern Gallatin and Madison Ranges. Today, an unsettled weather pattern will continue with an additional 4-6 inches possible in the southern ranges and 2-3 inches in the north. Temperatures will rise into the mid 30s F and winds will stay moderate to strong out of the WSW.

### Snowpack and Avalanche Discussion

#### *The Lionhead area near West Yellowstone and the mountains around Cooke City:*

Near West Yellowstone and Cooke City, the story is simple. Heavy snowfall and high winds have created very dangerous avalanche conditions. Storm totals over the past four days equal:

- 4 inches of SWE, totaling over 3 feet of snow, in the mountains around Cooke City.
- 2.9 inches of SWE, totaling over two feet of snow, in the mountains around West Yellowstone.

This heavy load has been deposited on top of a very weak snowpack resulting in highly unstable conditions ([photo](#), [photo](#)). Any slope that has received additional loading due to wind will be more susceptible to both natural and human triggered avalanches.

Today the message is clear - if you play in avalanche terrain you will likely find avalanches. During dangerous conditions such as these, it is possible to trigger slides from a distance including from the bottom of the slope. Even small, unassuming slopes can have large consequences, especially if associated with terrain traps.

Today, the avalanche danger is rated on **HIGH** on all slopes and travel in avalanche terrain is not recommended.

#### The southern Madison and southern Gallatin Ranges:

The southern Madison and southern Gallatin Ranges have not received as much snow as the mountains around Cooke City and West Yellowstone. However, storm totals of over a foot combined with strong winds are adding a tremendous amount of stress to a very weak snowpack.

Yesterday, riders in Cabin Creek and Tepee Basin in the southern Madison Range observed numerous natural and human triggered avalanches and found unstable results in their stability tests ([photo](#), [photo](#)). I found similar conditions in the Southern Madison Range on Thursday.

While wind loaded slopes are the primary avalanche concern, non-wind loaded slopes also have the capability of producing avalanches.

Today, very dangerous avalanche conditions exist on wind loaded slopes where the avalanche danger is rated **HIGH**. Non-wind loaded slopes have a **CONSIDERABLE** avalanche danger.

#### The northern Madison and northern Gallatin Ranges:

Yesterday, my partners and I toured into Beehive Basin and found four inches of high density snow resting over a variety of weak layers ([photo](#)). While four inches does not seem like a lot, it was enough to produce obvious signs of instability such as cracking and collapsing. We also sympathetically triggered a slide with a cornice drop, confirmation unstable conditions were present ([photo](#)).

Today, the primary avalanche concern will be any slope that is wind loaded. Prior to the storm, strong winds created spatially variable hard slabs that are now buried under the new snow. These slabs may be difficult to pick out visually but will often reveal themselves with a loud collapse. Wind slabs formed during or immediately after the storm will be of the softer variety and will easily fail under the weight of a skier or rider. Triggering one of these wind slabs can easily cause an avalanche to break deeper in the snowpack or even at the ground.

The Hyalite Drainage in the northern Gallatin Range deserves a special mention because it has more stable conditions. Recently formed wind slabs could produce an avalanche, but the overall likelihood of triggering a slide is less in this area.

Today, human triggered avalanches are likely on all wind slopes which have **CONSIDERABLE** avalanche danger. Slopes without a wind load have a **MODERATE** avalanche danger.

#### The Bridger Range:

Over the past four days the Bridger Range has received 1-2 inches of new snow. The lack of precipitation has done little to improve skiing and riding conditions, but it has helped reduce the avalanche danger.

Yesterday, the Bridger Bowl Ski Patrol did not receive any notable results during control work. They also mentioned avalanche observations around the area have been minimal. However, strong winds prior to the storm did produce stiff wind slabs which could be triggered by a skier or rider. Steep, rocky terrain, specifically below ridgelines will be the most like areas to find unstable snow.

Today, human triggered avalanche remain possible and the avalanche danger is rated **MODERATE**.

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**

### **Bozeman**

[Introduction to Avalanches with Field Course](#). MSU, SUB Ballroom C, 7-9:30 p.m. Jan 25 and 26 with a field day Jan 28.

### **West Yellowstone**

[1-hr Avalanche Awareness Lecture](#): Saturday, January 21, 7-8 p.m. at West Yellowstone Holiday Inn

### **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 Sue at 406-652-0090; [hitech@hi-techmotorsports.com](mailto:hitech@hi-techmotorsports.com).