

GNFAC Avalanche Advisory for Sat Dec 21, 2013

Good morning. This is Mark Staples with the Gallatin National Forest Avalanche Advisory issued Saturday, December 21 at 7:30 a.m. **Montana Import Group** in partnership with the **Friends of the Avalanche Center** sponsors today's advisory. This advisory does not apply to operating ski areas.

Mountain Weather

Snow returned last night and was still falling this morning. As of 7 a.m.

- 10 inches of snow fell in the Bridger Range
- 8-12 inches fell near Big Sky and the northern Madison Range
- 5-9 inches near West Yellowstone and the southern Madison and Gallatin Ranges
- 4-6 inches near Cooke City and in the northern Gallatin Range.

In the northern half of the advisory area this morning, winds were blowing 15-20 mph from the W gusting to 30 mph with temperatures in the low teens F. In the southern half, winds were blowing 10 mph from the SW gusting to 15-20 mph with temperatures in the single digits F. Temperatures may drop a few more degrees in the mountain near Bozeman and Big Sky and most places should have temperatures in the single digits F today. Wind speeds shouldn't change much but will shift to the NW. Snowfall will continue with another 2-3 inches falling mostly near Bozeman and Big Sky.

Snowpack and Avalanche Discussion

Bridger Range Madison Range Gallatin Range

Lionhead area near West Yellowstone

The avalanche situation is pretty simple – it's dangerous. The Bridger Range received 0.5-0.7 inches of [snow water equivalent \(SWE\)](#) last night on top of 0.6 inches of SWE from Thursday. Avalanches occurred prior to last night's snowfall. New snow and wind loading, which add weight to the snowpack, will produce more avalanches today. Even though snow wasn't falling yesterday, strong west winds were readily transporting the fresh snow and adding further weight to the snowpack on leeward slopes. The Bridger Bowl Ski Patrol easily triggered fresh wind slabs 1-3 feet deep on wind loaded slopes. On similar terrain in the backcountry, avalanches could break deeper in the snowpack and over wider areas.

Further south, the mountains near Hyalite Canyon, Big Sky, and West Yellowstone have received 0.3-0.5 inches of SWE this morning. While this isn't necessarily a lot of weight, the snowpack is incredibly weak ([video](#)). Yesterday snowmobilers near Buck Creek just south of Big Sky remotely triggered a slide about 120 feet wide. Slides in the northern Gallatin Range near Hyalite peak were remotely triggered on Monday. Remotely triggered avalanches are ones triggered from a distance when a weak layer in the snowpack fractures and collapses under your skis or your track in relatively flat terrain. As the fracture continues through the snowpack, it causes an avalanche on steeper terrain. Remotely triggered avalanches are a very bad sign.

Today, recent avalanche activity, recent wind loading, and new snow combine to make the avalanche danger **HIGH** on wind loaded slopes. Non wind loaded slopes have a **CONSIDERABLE** avalanche danger.

Cooke City

The situation near Cooke City isn't as simple, and the tricky nature of the snowpack demands a conservative approach. The simple part is that strong winds and new snow mean fresh wind slabs can be triggered. A skier yesterday observed several small wind slabs that had released naturally and today triggering these fresh wind slabs should be easy to do.

The tricky part is that avalanches can break much deeper in the snowpack ([video](#)). Some slopes have a snowpack 3-4 feet deep or less where weak facets a foot off the ground can fracture and cause a big avalanche. Isolated slopes have a layer of surface hoar buried 2.5 feet deep that can also fracture. Other slopes have a stronger snowpack over 5 feet deep where wind slabs will be the only problem. Knowing which problem exists on a given slope requires a careful snowpack evaluation; otherwise, we're playing Russian Roulette. For these reasons today the avalanche danger is rated [CONSIDERABLE](#).

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 or call us at 587-6984.

BACKCOUNTRY SKIERS AND RIDERS NEEDED FOR MSU SURVEY

This project aims to collect GPS location information and survey responses from backcountry skiers and riders to better understand what types of terrain decision we make. The focus is on backcountry skiers and riders of all abilities and experience. You need not be an expert backcountry skier to participate in this research. For more information and to sign up: www.montana.edu/snowscience/tracks

SNOWMOBILE AVALANCHE EDUCATION

The Canadian Avalanche Association produced a series of videos titled "Throttle Decisions" on avalanche safety for snowmobilers. [Mark's blog post](#) outlines the topics.

EVENTS/EDUCATION

BOZEMAN: TODAY, December 21, 10:30-11:30 a.m. **FREE Avalanche Transceiver Workshop**, Bridger Bowl, next to the rental shop at Jim Bridger Lodge. NO registration required. Just show up.

WEST YELLOWSTONE: Sunday, December 29, 10 a.m., **Companion Rescue Clinic for Snowmobilers**, Pre-Registration is required. <https://www.ticketriver.com/event/9387>