

GNFAC Avalanche Advisory for Mon Jan 3, 2011

Good morning. This is Eric Knoff with the Gallatin National Forest Avalanche Advisory issued on Monday, January 3, at 7:30 a.m. **On Site Management**, in partnership with the **Friends of the Avalanche Center**, sponsors today's advisory. This advisory does not apply to operating ski areas.

Mountain Weather

A moist northwest flow has deposited 8-10 inches of light density snow in the Bridger Range, 2-3 inches in the northern Madison and Gallatin Ranges, and 1-2 inches elsewhere. At 4 am mountain temperatures are in the single digits and winds are blowing out of the W-NW at 5-15 mph with gusts in the 20s. Today snow showers will taper off and temperatures will climb into the high teens under mostly cloudy skies. Winds will continue to blow out of the W-NW at 5-15 mph throughout the day and dry conditions will persist over the next 24 hours.

Snowpack and Avalanche Discussion

The northern Madison Range:

The skiing and riding conditions in the mountains around Big Sky have been improving on a daily basis. Unfortunately this does not mean that stability has been improving at the same rate. Buried surface hoar 18-24" deep continues to produce obvious signs of instability such as cracking, collapsing, and recent avalanche activity.

On Friday, snowmobilers on Buck Ridge triggered an avalanche on the surface hoar layer that broke up to 2 feet deep. On Saturday, skiers on Dudley Peak got cracking and collapsing as they skied and also found the surface hoar to be reactive in all their stability tests. This layer does appear to be gaining strength, but should not be trusted. The dilemma with this scenario is slopes that are the most desirable to ride also pose the greatest avalanche threat. If you are skiing or riding in the mountains around Big Sky, digging multiple snowpits in search of buried surface hoar is wise before skiing steep terrain.

A less pervasive problem, but still one to take into consideration, is the recent formation of wind slabs on leeward slopes. Although the winds have eased over the past 24 hours, the likelihood of triggering a pocket of wind deposited snow remains real. On Saturday, skiers on Dudley Peak observed natural wind slab avalanches on north and east facing slopes. The Big Sky and Moonlight Ski Patrol's also reported triggering wind slabs with ski cuts and explosives while doing control work on Saturday. With an additional 2-3 inches of light density snow over the past 24 hours touchy wind slabs have likely formed in favored leeward loading zones.

Today human triggered avalanches are likely on all wind loaded slopes and slopes steeper than 35 degrees where the avalanche danger is rated **CONSIDERABLE**. Slopes less than 35 degrees that have not received wind loading have a **MODERATE** avalanche danger.

The Bridger Range

The BBC (Bridger Bowl Cloud) has made a surprise appearance delivering over 8" of cold smoke powder to the Bridger Range. This has refreshed the ski conditions but has also elevated the avalanche danger. Areas of wind deposited snow on leeward slopes directly below the ridgeline will be the most prone to avalanche activity.

On Saturday, the Bridger Bowl Ski Patrol triggered wind slabs 4-18" deep while doing control work; a good indication that similar slabs are lurking outside of the ski area boundary. The new snow has formed additional wind slabs and has obscured the slabs formed earlier this week. These both will likely fail under the weight of a skier or rider.

Slopes that have not received wind loading are generally strong with good stability. However, isolated areas of weak snow do exist, primarily buried surface hoar near Flathead Pass. A few snowpits on desired slopes will give a good indication if this layer is present.

For today, all wind loaded slopes steeper than 35 degrees have a **CONSIDERABLE** avalanche danger. Slopes steeper than 35 degrees that have not received wind loading have a **MODERATE** avalanche danger and all slopes less than 35 degrees have a **LOW** avalanche danger.

The southern Madison and entire Gallatin Ranges, the Lionhead area near West Yellowstone, the mountains around Cooke City and the Washburn Range:

Over the past week strong storms have tested the snowpack in the southern ranges. To our delight, the snowpack has adjusted well to the latest load keeping avalanche activity to a minimum. Yesterday I rode in the Lionhead area and found soft snow with stable conditions. Doug also traveled south yesterday to Bacon Rind, checking up on the buried surface hoar layer that formed over two weeks ago. Doug easily found this layer in all his snowpits, but was pleased by the positive signs of strengthening this layer showed in stability tests ([photo](#)) ([video](#)). The end result – Doug and his partner skied the slope.

Although the general stability of the snowpack is good, areas of wind deposited snow remain a concern. Leeward slopes directly below ridgelines will be the most likely to produce an avalanche. Yesterday a rider near Cooke City reported an avalanche near Lulu Pass. This slide likely occurred due to recent wind loading.

Today, wind loaded slopes steeper than 35 degrees have a **CONSIDERABLE** avalanche danger. Less steep slopes that have not received wind loading have a **MODERATE** avalanche danger.

Doug will issue 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.

Avalanche Education

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