GNFAC Avalanche Forecast for Tue Nov 23, 2010

Good Morning. This is Eric Knoff with an early season avalanche information bulletin issued on Tuesday, November 23 at 7:30 a.m. This Bulletin is sponsored by **Bridger Bowl** in partnership with the **Friends of the Avalanche Center**. We will put out another bulletin tomorrow morning, shifting to non-stop daily advisories on Friday. Please remember that uphill traffic is not allowed at Big Sky or Moonlight Basin Ski Areas. Bridger Bowl is not open and has backcountry snow conditions.

Mountain Weather

Over the past 24 hours a strong storm system has impacted the southern mountains of our advisory area delivering close to a foot of snow near West Yellowstone and 4-6 inches to the mountains around Cooke City. Big Sky has picked up 3-4 inches, but snow amounts decrease rapidly has you head north with the northern Gallatin Range as well as the Bridger Range only picking up an inch or two.

At 4 am this morning mountain temperatures were in the single digits above or below zero in the northern mountains and mid to high teens in the south. Valley temperatures are close to zero. Both the Hyalite and Cooke City weather stations are recording consistent winds at 20 to 30 mph out of the SW with gust reaching over 50 mph. The Bridger Range is on the calm side with ridge top winds blowing 10-15 mph out of the SW. Today, we can expect more snow and wind throughout our advisory area with the heaviest accumulations taking place around West Yellowstone and Cooke City.

Snowpack and Avalanche Discussion

The Bridger Range and northern Gallatin and Madison Ranges

The first official day of winter is just shy of a month away but our weather and snowpack seem more like mid-January then mid-November. Over a meter of settled snow now blankets most terrain above 8,000ft in the Bridger Range, the northern Gallatin Range and the northern Madison Range. Unlike last season, the bottom layers of the snowpack are fairly dense and relatively well bonded, providing a strong foundation for the new snow to fall on. Although we are feeling optimistic that our snowpack will not experience the pervasive depth hoar problem of last season, a few issues still exist that warrant extra caution when in the backcountry.

Winds during the past couple of days have formed fresh wind slabs within the new snow. With plenty of light density snow to move around, wind slabs have likely formed on leeward aspects - mainly near ridgelines. These winds slabs will likely fail under the weight of a skier or rider and may create enough force to carry a rider into trees, rocks, or terrain traps. Once triggered, a release of these slabs will most likely be confined to the new storm snow, but there is potential for them to pull out deeper layers within the snowpack.

Our snowpack is building, which translates to layers of snow becoming buried with each subsequent storm. A layer of concern that is located deeper in the snowpack exists at the interface between the early October snow and the newer snow that has fallen over the past few weeks. This layer now exists two to three feet below the snow surface and has the potential to produce larger, more destructive avalanches.

Big Sky Ski Patrol has recently triggered large slides on or around this layer on both north and south facing slopes. Mark and I skied Mt. Blackmore in Hyalite Canyon yesterday and found this same layer in our snowpits. It did not produce clean, easy shears in our stability tests, but this does not mean it should be ignored.

Strange layers have a way of producing strange events. This layer was also observed by a group of skiers in the Flathead Pass area of the northern Bridgers (photo). Also, a thin layer of surface hoar has been forming in Beehive Basin (photo). Although not observed on every slope, it will be a layer that needs to be noted as more snow falls on top of it.

For today, the combination of new snow and strong winds has created a **CONSIDERABLE** danger on all wind loaded slopes. All slopes that do not have wind loading have a **MODERATE** danger.

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

The southern Mountains have been the target for strong storm systems over the past few weeks picking up more than four feet of snow. In the past 24 hours the Madison Plateau Snotel site near West Yellowstone has recorded ten inches of snow equaling 1.3 inches of snow water equivalent (SWE). The Fisher Creek Snotel site near Cook City has recorded over a half inch of SWE in the past 24 hours. This hefty shot of snow has been accompanied by strong winds out of the SW making wind loaded terrain our primary concern. Leeward aspects near ridgelines will be the most likely spots to trigger slides, but avoiding terrain traps such as gullies, creek beds and road cuts is smart protocol. It is important to remember that you do not need to be traveling in steep avalanche terrain to be exposed to avalanches. Traveling in avalanche run out zones can be extremely dangerous so paying attention to the terrain above you is a good way to avoid being surprised.

We have no field data from the southern mountains yet, so I recommend careful snowpack and weather evaluation as well as conservative decision making if you're heading in to the backcountry. We will begin issuing avalanche danger ratings as we get out in the field and assess the stability more thoroughly.

I will issue another Avalanche Information Bulletin tomorrow morning. Daily advisories will start on Friday. If you have any snowpack or avalanche observations, drop us a line at mtavalanche@gmail.com or call us at 587-6984.

Upcoming Avalanche Education

Basic Avalanche Awareness – Wed & Thurs, December 1 & 2, 7:00pm – 9:30pm at SUB Ballroom B&C; 12/4-Field day at Bridger Bowl (more information) (Prepay $25 fee)

Avalanche Awareness for Snowmobilers – Wed & Thur, December 1 & 2, 7pm – 9:30pm at Team Bozeman, 2595 Simmental Way (more information)

The field course will be either Sunday, Dec 5th or 12th depending on snow conditions.