

GNFAC Avalanche Advisory for Wed Mar 3, 2010

Good Morning. This is Doug Chabot with the Gallatin National Forest Avalanche Advisory issued on Wednesday, March 3, at 7:30 a.m. **On Site Management**, in cooperation with the **Friends of the Avalanche Center**, sponsor today's advisory. This advisory does not apply to operating ski areas.

Mountain Weather

Mountain temperatures rose into the high 30s yesterday under a veil of high clouds. Last night temperatures dropped into the low 20s as more clouds rolled in and dusted the mountains south of Bozeman with a trace to one inch of new snow. Winds from the SSW calmed to 15-20 mph from yesterday's 40 mph gusts. Today will be mostly cloudy with temperatures reaching the low 30s as a weak disturbance skirts the southern part of the state. Winds will be 10-20 mph and by tomorrow morning expect no more than an inch of snow.

Snowpack and Avalanche Discussion

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

Wet, loose avalanche activity was nil yesterday. Winds and high clouds kept the snow surface cool. Even the strong winds at Big Sky could not pry any flakes loose. Warm temperatures and sun on Sunday and Monday created crusts on south facing slopes. On other aspects I expect to find near-surface faceting from diurnal recrystallization ([article](#)), which could be a future weak layer if it survives long enough to be buried.

Although our last significant snowfall was Thursday, avalanches are still releasing. A few wet slides were reported in the deep gullies up Hyalite from Monday, but with today's cool temperatures and cloudy conditions wet activity will be on hold. Also on Monday, skiers were able to kick off a big cornice in Hyalite and trigger a large slide on an east-facing slope. This was a dry, hard slab avalanche that broke on facets near the ground. The avalanche ran 1,200 feet, was 2-5 feet deep and 800 feet wide. Check out these pictures: ([photo1](#), [photo2](#), [photo3](#)).

Throughout our forecast area there are two weak layers in the snowpack we're concerned with. The first is a thin layer of facets one to two feet under the surface. It's either surface hoar, small-grained facets or both. Regardless, many stability tests are breaking clean on it. Skiers up Hyalite on Sunday and again yesterday found this weak layer in their snow pits. Given how close it is to the surface, it's easy to dig down and search for it. Near the ground is our second layer of concern-three month old depth hoar. These big, sugary grains have gotten stronger with time, but as the skiers up Hyalite found, it can still avalanche. Given these weak layers and recent avalanche activity, for today the danger continues to be rated **MODERATE** on all slopes.

TRIGGERING AVALANCHES

An avalanche occurs when the stress on a slope exceeds the strength of the weakest layer. When snow is very weak, only a small stress is needed to get it to avalanche-a few inches of snow or a person near the bottom of a slope. As the weak layer gets stronger the stress needs to increase as well. But there's another way to trigger it: by finding the Achilles' heel of the snowpack-its weakest spot. Ski patrollers are always searching for it during avalanche control. That's why a well placed small explosive can yield a big avalanche while a poorly placed larger shot cannot. And that's also why a skier can trigger big slides as the snowpack trends toward stability. They can ski over a thin, weak zone and collapse the weakest layer propagating a fracture far and wide.

Although a large, falling cornice is an effective trigger because it adds a huge amount of stress very quickly, the relatively puny load of a skier can also get a slope to slide if he tickles it in just the right spot.

Without much new snow and warmer, longer days our snowpack is getting stronger. Big stresses, like kicking off bus-sized cornices, are a good way to trigger slides. We saw this in Hyalite a few days ago and also on Saddle Peak a few weeks back. But do not assume that a skier or snowmobiler could not trigger it. Just like a well placed arrow can bring down an elk, a well placed skier can trigger an entire slope.

Mark will issue the next advisory tomorrow morning at 7:30 a.m. If you get out in the backcountry let us know what you find. You can reach us at 587-6984 or email us at mtavalanche@gmail.com.

Avalanche Education & Events

1. Bozeman

Join us to discuss the snowpack, weather, and circumstances leading up to the avalanche on Saddle Peak. We will show videos, pictures, and share stories about this popular sidecountry destination. Cost: Free, When: Thursday, March 4 from 6:30-7:30 p.m., Where: Bozeman Public Library meeting room.

2. Bridger Bowl

29th Annual Pinhead Classic on Saturday, March, 6th. "Carnival" is this year's costume theme, so come dressed up to race, socialize and win great prizes. Registration fee is \$30 but gets you all sorts of cool stuff. Check out the website <http://pinheadclassic.com> for details.

3. Moonlight Basin

Comprehensive avalanche awareness class - Thursday, March 4th to Saturday, March 6th

events@moonlight.com or 406-993-6026

4. Bell Lake Yurt, Tobacco Root Mountains

Montana Backcountry Adventures - Comprehensive avalanche awareness class

Wednesday, March 12th to Friday, March 14th

For more info call 995-3880 or go to www.skimba.com