

GNFAC Avalanche Advisory for Thu Feb 28, 2013

Good morning. This is Mark Staples with the Gallatin National Forest Avalanche Advisory issued on Thursday, February 28 at 7:30 a.m. A **Montana FWP Recreation Trails Grant** sponsors today's advisory. This advisory does not apply to operating ski areas.

Mountain Weather

This morning clouds were moving over the area with temperatures in the low teens F and winds averaging 10-15 mph from the W with gusts of 20-30 mph. A little snow may fall this morning followed by a better chance tonight. High temperatures will reach the low to mid 20s F and winds will continue from the W at 10-15 mph gusting to 25 mph. By tomorrow morning the mountains near Bozeman and Big Sky should get 2-3 inches of snow while areas further south will receive about an inch.

Snowpack and Avalanche Discussion

Bridger Range Madison Range Gallatin Range

Lionhead area near West Yellowstone Cooke City

The problem: Weak layers of faceted crystals exist in the *upper three feet* of the snowpack on many slopes ([video](#)). Some of these layers formed in mid-January and are easy to see while others formed more recently and are harder to see but will usually break cleanly in stability tests. This time of year very small, faceted crystals can form in a matter of hours and get buried. The Big Sky Ski Patrol ski cut a fresh wind slab 1 foot deep by 100 feet wide that fractured on a thin layer of facets that formed in the last few days.

Evidence of the problem: During the last 2 weeks these layers have produced [human triggered avalanches](#). In Beehive Basin near Big Sky on Tuesday, I found one of these layers on a W facing slope. It was very obvious visually and while digging my snowpit but did not break in my stability test. I did not trust it and later learned the Big Sky Ski Patrol triggered an avalanche on a slope with a very similar snowpack structure. This stability test result is called "false stable". Read more in this [article](#). Finding a soft layer of weak facets under a harder layer of cohesive snow is a red flag regardless of stability test results.

What to do: Stable slopes definitely exist but how to find one? It takes a little work. Dig several snowpits about 3 feet deep looking for these faceted layers. Conduct several stability tests. Do it all quickly. It's more important to dig multiple pits quickly than one that takes a while. A single red flag like a nearby avalanche, obvious weak facets under a slab, or poor stability test results is enough evidence to avoid avalanche terrain.

Triggering an avalanche remains possible especially if you hit a thin spot on a slope. These spots are often near rocks which may not be visible as was the case near Flathead Pass in the Bridger Range on Saturday ([photo](#)). For today the avalanche danger is rated [MODERATE](#).

Minimizing False-Stable Test Results

Already this season all three of us have gotten false-stable tests results, which are a bit scary. Stability tests are not always accurate. Getting stable results during unstable conditions happens about 10% of the time. Digging multiple snowpits and performing several stability tests can reduce this occurrence to about 1%. Karl and Doug studied this "false-stable" problem and wrote this [paper](#).

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 or call us at 587-6984.

EDUCATION

West Yellowstone. TOMORROW, the Friends of the Avalanche Center are giving a 1-hour *Avalanche Awareness* lecture, March 1 at 7 p.m. at the Holiday Inn Conference Center.