

GNFAC Avalanche Forecast for Fri Dec 28, 2012

Good morning. This is Mark Staples with the Gallatin National Forest Avalanche Advisory issued on Friday, December 28 at 7:30 a.m. Today's advisory is sponsored by World Boards and the Bountiful Table. This advisory does not apply to operating ski areas.

Mountain Weather

Since yesterday the mountains near Bozeman and Big Sky received 2-3 inches of snow while mountains further south received a trace to one inch. Light snow was still falling this morning but should end soon as dry air moves over SW Montana today. Temperatures this morning were near 10 degrees F and should warm to the mid-teens to 20 F today. Westerly winds at ridgetops in the Bridger and northern Gallatin Ranges were averaging 20 mph with gusts of 30 mph. In all other areas westerly winds averaged 5-10 mph with gusts of 15-30 mph. Overall for today expect generally light winds, cold temperatures, and sunshine.

Snowpack and Avalanche Discussion

Bridger Range Madison Range Gallatin Range

Lionhead area near West Yellowstone Cooke City

Many areas have a strong snowpack but some slopes have weak, faceted snow about 1 foot above the ground with a cohesive slab on top. A few places like Mt Ellis have a completely weak and faceted snowpack with no slab. The real question is what does it take for a slope to be unstable? The first requirement is for stress from new or wind-blown snow and stress from a skier or rider to initiate a crack in the weak layer. Without much new snow and mostly calm winds, initiating a crack has become more difficult, thus avalanches have become less likely.

The second requirement is for the crack to propagate across a slope. Crack initiation plus propagation produces an avalanche. On many slopes with a strong snowpack, neither crack initiation nor propagation will occur. The problem exists mostly where the snowpack is about 3 feet deep and a slab of cohesive snow rest on weak, faceted snow about 1 foot above the ground. This combination can propagate a crack and produce an avalanche if a skier or rider finds the right spot on a slope to initiate the crack. Slopes with this layering are not obvious and can be found on S aspects in some places ([photo](#), [video](#)) or N aspects in other places ([photo](#), [video](#)).

Today, dig several quick snowpits in safe locations looking for shallow snow with a slab resting on weak facets that propagate a crack in extended column tests (info on snowpits and stability tests [here](#)). Then consider if the snow layering in your snowpit is similar to the layering on the slopes where you hope to ski or ride. If the snow is deep and strong, then watch for shallow wind slabs and hit it. Because human triggered avalanches remain possible today, the avalanche danger is rated MODERATE.

NEW WEAK LAYERS FORMED

Last week's period of cold, sometimes clear weather, turned the top few inches of snow into weaker, small grained facets. These did not form everywhere, and to further complicate their distribution, strong winds on Friday scoured them from some slopes too. This layer is now capped by the recent snows. It is not deep enough to be a grave avalanche concern yet, but we'll be looking for it since these layers tend to persist.

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.

ARTICLES

At the GNFAC we write articles for various publications: Carve, Montana Snowmobile Association Newsletter, The Avalanche Review. We also post these on our website, so if you are interested in reading more about avalanches check out [“Our Articles” on the “Education” page](#). Recent ones include:

- Temperature Induced Dry Snow Avalanches
- Why dig a Snowpit?
- Professional Secrets for a Quick Avalanche Rescue
- Time: The Deciding Factor

EDUCATION

TONIGHT: Friday, December 28, World Premier of “Snow Guardians” at 7:00 p.m. at the Emerson Cultural Center. More information here: <http://www.snowguardians.com/>

Thursday, January 3, 6:00 p.m., 1-hour Avalanche Awareness lecture at 406 Brewing Company, Bozeman.

Tuesday, January 8, 7:00 p.m., 1-hour Avalanche Awareness at Big Timber High School.

Wednesday, January 9, 6:30 p.m., 1-hour Avalanche Awareness at REI, Bozeman.

Thursday and Saturday, January 10 and 12, Rescue Clinic. Thursday at 6:00 p.m. at REI, Bozeman and Saturday at 10 a.m. in the field, location TBD. For more info and to register go <http://www.rei.com/event/47692/session/64126>

Saturday and Sunday, January 12 and 13, Snowmobiler Introduction to Avalanches with Field Course. For more information and to sign up: <https://www.ticketriver.com/event/4979-snowmobiler-introduction-to-avalanches-w-field>