

## [GNFAC Avalanche Advisory for Fri Dec 2, 2011](#)

Good morning. This is Mark Staples with early season avalanche information issued on Friday, December 2 at 7:30 a.m. This bulletin is sponsored by Bridger Bowl. Please remember that uphill traffic is not allowed at Big Sky or Moonlight Basin ski areas. Uphill traffic is permitted at Bridger Bowl, but backcountry snow conditions exist.

### Mountain Weather

Wednesday's storm favored the northern Gallatin and Madison ranges. By yesterday morning, 9 inches of snow fell at Big Sky and Hyalite Canyon, 5-8 inches fell near Cooke City, and 2-3 inches fell in all other areas. Since then no more has snow fallen. Winds blew strong from the NW yesterday afternoon at 15-30 mph and shifted to the SW this morning. Winds were calmer near Cooke City and West Yellowstone this morning blowing 5-15 mph. Mountain temperatures at 4 a.m. were in the mid to high teens F although valley temperatures near West Yellowstone were -10 degrees F.

Today a cold front will move over the area bringing light snow and colder temperatures. Winds will blow 20-30 from the W ahead of this front then calm and shift to the N as this front passes. Temperatures should drop into the single digits F by this afternoon. By this evening 1-3 inches of snow should accumulate.

### Snowpack and Avalanche Discussion

#### The northern Gallatin Range and mountains around Cooke City:

The northern Gallatin Range and the mountains around Cooke City have had the most avalanche activity which has occurred on a layer of weak, faceted snow near the ground. 3-4 feet of dense supportable snow rests on top of this weak layer. Additionally these areas received 5-9 inches of new snow from Wednesday's storm. There you have it, bull's eye information:

1. The ingredients for an avalanche - a persistent weak layer and a slab.
2. A snowpack structure which has demonstrated its ability to produce natural and human triggered avalanches.
3. Recent snow which adds more weight, which adds more stress, and leads to more avalanches.

A skier near Cooke City noted one recent avalanche on Henderson Mtn. and another on Scotch Bonnet Mtn. Unfortunately I do not expect the situation to change in the near future, and this snowpack structure will continue to produce avalanches.

Interestingly, the avalanche observed on Scotch Bonnet Mtn. had not occurred when Doug and I were riding near Cooke City last weekend. However, we noted the similarity in the snowpack on Crown Butte (where a [rider triggered an avalanche](#) the day we were there) and the snowpack on Scotch Bonnet. [We documented the similarity in a photo](#). This recently observed avalanche on Scotch Bonnet is clear evidence of the ability for this snowpack structure to produce more avalanches.

#### The Bridger, southern Gallatin and entire Madison Ranges:

The Bridger, southern Gallatin and entire Madison Ranges have a much less uniform snowpack. This fact does not mean avalanches are any less possible. The Big Sky Ski Patrol has been able to continually trigger

avalanches on Lone Mountain where the snowpack mirrors conditions in the backcountry. Further south near the Bacon Rind drainage and on Lionhead, Eric found [reasonable stable snow](#).

We continue to receive a mixed bag of reports, and [this is the problem](#). Some slopes are stable, some are unstable, and others have no snow at all. Fortunately stability assessments are quick and easy. Dig to the ground, which isn't buried under much snow, and look for facets near the bottom of the snowpack. Doing a stability test is much less important than finding this layer of facets which has proven its ability to produce avalanches. I wouldn't trust it regardless of stability test scores. If this layer exists, it can easily produce an avalanche especially if capped by a layer of wind deposited snow.

Eric will issue the next bulletin Monday morning. As soon as we get another storm or two, we will begin daily advisories with danger ratings. For now, any snowpack or avalanche information is especially valuable. If you get out, please drop us a line at [mtavalanche@gmail.com](mailto:mtavalanche@gmail.com) or leave us a message at 587-6984

#### EVENTS/EDUCATION

For more information and to sign up for the multi-day courses in Bozeman, Livingston and West Yellowstone, go here: <http://www.mtavalanche.com/education/classes/workshops>

To check out all our education programs: <http://www.mtavalanche.com/workshops/calendar>

#### BILLINGS

Avalanche Awareness Lecture, Tuesday, December 6, Beartooth Harley.

#### LIVINGSTON

Snowmobiler Introduction to Avalanches with Field Course. Wednesday, December 7, and Thursday, December 8 evening lectures with a field course on Sunday, December 11. Advanced registration IS REQUIRED.

#### WEST YELLOWSTONE

Snowmobiler Introduction to Avalanches with Field Course. Thursday, December 15 all day lecture with a field course on Friday, December 16, <sup>and</sup> Thursday, December 8 evening lectures with a field course on Saturday, December 10. Advanced registration is NOT required, but encouraged.