GNFAC Avalanche Advisory for Sun Apr 8, 2012

Good Morning. This is Mark Staples with the 138th and final Gallatin National Forest Avalanche Advisory of the season issued on Sunday, April 8 at 7:30 a.m. Thank you to the Friends of the Avalanche Center, the Big Sky, Bridger, Moonlight Basin, and Yellowstone Club ski patrols, Gallatin Snow Rangers, and everyone who sent us observations or made a contribution. The list is endless, and our advisories wouldn't be possible without your help. This advisory does not apply to operating ski areas.

Mountain Weather

NWS Forecast Discussion

This morning the weather was clear, calm, cold and dry. Temperatures were near 20 degrees F and winds were blowing 5-15 mph from the W and SW with a few gusts of 25 mph. A ridge of high pressure is building over the area and will bring another beautiful day. Temperatures will rise in to the 40s F. Winds will blow 5-10 mph from the W with gusts of 20 mph.

Snowpack and Avalanche Discussion

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

Yesterday on Lionhead one of the Gallatin Snow Rangers and I turned off our weather station there and removed the sensors for the summer. We joined a group of riders from Bozeman and rode further into that range finding new snow depths ranging from 4 inches to 24 inches in a short distance with little change in elevation. Stability can change just as much through both time and space. Even if stability seems good, the snowpack will surprise us if we let our guard down. Several years ago around June 1st, I was caught in a dry slab avalanche in the Beartooths. Avalanches don't end until the snow melts.

While riding on Lionhead, we saw point releases as the new snow became wet. Riders on Buck Ridge near Big Sky found a wind affected layer within the new snow that would occasionally break but was not a major issue. There will be several things to watch for today:

1. Even though winds have been relatively calm, a few places near ridgelines and under cornices will have wind deposited snow that may avalanche. With warm temperatures today these wind slabs will bond to the underlying snow fairly quickly.
2. Slopes receiving direct sunshine will warm quickly and produce wet avalanches. The difference between wet snow avalanches and dry snow avalanches can be thought of in terms of stress vs strength. With dry avalanches, new snow adds stress until it overcomes the strength of the snowpack. The opposite happens with wet avalanches in which snow loses strength until it can no longer support itself.
3. Weak snow exists near the ground in many areas (**photo**). This weak snow has been a problem all season and caused many avalanches. Triggering an avalanche on this layer will be hard to do, but its consequences would be severe.

This weak snow near the ground deserves some discussion. On high elevation N aspects, this layer is depth hoar and has changed little since it formed in November. On other slopes that experienced prolonged above freezing weather in late March, this depth hoar entered a transition period as it became wet. It produced massive wet slab avalanches in the Bridger Range. With recent cold weather, this transition period was put on hold as the

percolation of liquid water through the snowpack stopped. Unfortunately this layer remains weak. Until we get prolonged warm weather to establish drainage channels for melt water through the snowpack, we should be concerned with this layer and remain conservative with our decision making.

Near Cooke City the snowpack is much deeper than in other places; consequently, this layer near the ground is stronger and much less of a concern. Once the snowpack has a little more time to adjust to the load of snow from the recent storm, this area will be the place to go for riding and skiing in chutes, couloirs, and big faces.

Today there are heightened avalanche conditions on slopes with dry wind-blown snow and on other slopes with wet snow. Also the possibility remains for avalanches breaking at the ground. For these reasons, the avalanche danger throughout the advisory areas is **MODERATE**.

Doug, Eric, and I would like to thank you for your support, observations, feedback, and encouragement. You are the reason we are here. After today's advisory we'll post a few things to keep in mind as we continue into spring. Keep in touch and drop us a line at mtavalanche@gmail.com or 587-6984. See you in the fall and have a great summer.