GNFAC Avalanche Forecast for Tue Mar 4, 2014

Good Morning. This is Eric Knoff with the Gallatin National Forest Avalanche Advisory issued on Tuesday, March 4 at 7:30 a.m. **Gallatin River Lodge** and **Outlaw Partners**, sponsor today's advisory. This advisory does not apply to operating ski areas. For a voice recording of today's advisory please call (406) 587-6981.

Mountain Weather

Over the past 24 hours the mountains around Cooke City have received 1.1 inches SWE (snow water equivalent) totaling close to a foot of new snow. The mountains around West Yellowstone have picked up .6 inches of SWE while the mountains around Bozeman and Big Sky picked up .4 inches of SWE.

At 4 a.m. temperatures are in the 20s F and winds are blowing 10-20 out of the WSW with ridge top gusts reaching over 30 mph. Today, skies will be partly to mostly cloudy under a moist westerly flow. Temperatures will warm into the mid to upper 30s F and winds will remain light to moderate out of the WSW. Precipitation will be limited to the southern mountains where an additional 1-2 inches is possible this morning. Conditions will dry out this afternoon and a quiet weather pattern will prevail for the next 24 hours. Not to worry though – another potent storm system is forecasted to impact the area Wednesday night into Thursday.

Snowpack and Avalanche Discussion

Cooke City

Will it ever stop!? The mountains around Cooke City have a fire hose pointed directly at them and the handle to turn it off is broken. Over the past 24 hours Fisher Creek Snotel site has received another 1.1 inches of SWE (snow water equivalent) – making the 48 hour total 1.9 inches of SWE. The 30 day total for Fisher Creek Snotel site is now over 13 inches of SWE!

This bombardment is keeping the snowpack under consent stress and the avalanche danger elevated. It's no secret that unusual snow conditions make for unusual avalanches as we witnessed in Missoula last week. Today, I would not trust the snowpack for the simple reason that is has not stopped snowing - for nearly thirty days!

Avalanches breaking in the storm snow will be the most likely problem. On south facing slopes nearly two feet of snow sits on top of an ice crust that formed last week. Human triggered avalanches occurred on this interface on Friday and Saturday (**photo**). Skiers also observed recent natural avalanches on north and east facing slopes south of town yesterday. Due to the sheer volume of snow I would keep slope angles below 30 degrees today and avoid avalanche runout zones.

While new snow instability is the primary concern, the outlier deep slab can't be ruled out. Skiers triggered a deep slab avalanche off Woody Ridge last week. The trigger point for this slide was a thin rocky area where the snowpack was only a foot deep. Recognizing and avoiding thin areas is a good way to avoid this problem (**photo**, **video**).

Today, more snow and wind make human triggered avalanches likely and the avalanche danger is rated **CONSIDERABLE**.

Sothern Gallatin Range Southern Madison Range

Lionhead area near West Yellowstone

The mountains around West Yellowstone have received their fair share of snow. Madison Plateau Snotel site has picked up 1.5 inches of SWE over the past three days. Carrot Basin Snotel site in the southern Madison Range is close to 1" of SWE. This recent load is adding stress to a layer of facets buried 2-3 feet deep.

Although this layer is gradually getting stronger, it still holds the potential to propagate a fracture and produce avalanches. This was demonstrated by the human triggered slide near Hebgen Lake on Saturday (**crown**, **runout**). As more weight is added to this layer I expect it will become more reactive. Until the snowpack has time to adjust I would avoid all slopes steeper than 35 degrees.

A secondary concern is slides failing at the ground. Mark observed this problem in the Lionhead area last week (**video**). Watch out for and avoid thin areas in the snowpack - primarily around rock out croppings and scoured ridgelines. If a slide does fail at the ground you will be dealing with a large and unmanageable avalanche.

Today, weighted weak layers make human triggered avalanches likely and the avalanche danger is rated **CONSIDERABLE**.

Northern Madison Range Northern Gallatin Range

The northern Madison Range and Northern Gallatin Range are stuck between better stability to the north and poor stability to the south. A layer of facets buried 2-3 feet deep exists and produced multiple human triggered avalanches last week (**Chippewa**, **Little Bridger**). The problem with this layer is does not exist on all slopes. This makes stability assessment tricky. It's worth digging and doing a slope specific stability assessment before committing to steep terrain.

I would be especially cautious on any slope that has received a recent wind load. A few inches of new snow overnight combined with moderate winds from the west-southwest has likely formed wind drifts on upper elevation-leeward slopes. These fresh wind slabs will be easily triggered by skiers or riders. They will also be putting additional stress on buried weak layers.

Today, human triggered avalanches are likely on wind loaded slopes steeper than 35 degrees which have a **CONSIDERABLE** avalanche danger. All other slopes have a **MODERATE** avalanche danger.

The Bridger Range

The Bridger Range has a strong snowpack, but a human triggered slide near Frazier Lake on Sunday is a good reminder this area is not immune to avalanche activity. The slide broke a foot deep and occurred on a steep-north facing slope. This slide stayed confined to recent storm snow.

Fortunately, the Bridger Range lacks buried persistent weak layers, which allows the snowpack to gain strength quickly. With only 1-2 inches of new snow over the past 24 hours, avalanches will be harder to trigger.

Today, heightened avalanches conditions exist on specific terrain features making human triggered avalanches possible. For this reason the avalanche danger is rated **MODERATE**.

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.

BACKCOUNTRY SKIERS AND RIDERS NEEDED FOR MSU SURVEY

This project aims to collect GPS location information and survey responses from backcountry skiers and riders to better understand what types of terrain decision we make. The focus is on backcountry skiers and riders of all abilities and experience. You need not be an expert backcountry skier to participate in this research. For more information and to sign up: www.montana.edu/snowscience/tracks