GNFAC Avalanche Advisory for Sun Feb 9, 2014

Good morning. This is Eric Knoff with the Gallatin National Forest Avalanche Advisory issued on Sunday, February 9 at 7:30 a.m. **Yellowstone Club Community Foundation**, in partnership with **Friends of the Avalanche Center**, sponsor today's advisory. This advisory does not apply to operating ski areas.

Mountain Weather

Over the past 24 hours 4-6 inches of low density snow has fallen in most mountain locations with the exception of Cooke City which has received closer to 10 inches. The two day storm totals are impressive. The mountains around Big Sky and West Yellowstone have received well over a foot low density snow totaling .7-.8 inches of SWE. The mountains around Cooke City have also received well over a foot of snow totaling 1" of SWE. The Bridger Range and Northern Gallatin Range have received 6-8 inches totaling .3-.5 inches of SWE.

Currently, temperatures are in the teens F with the exception of the Bridger Range where temps are in the single digits F. Winds are strongest near Big Sky including the northern Gallatin Range where they are blowing 20-40 mph out of the west-southwest. Winds are blowing 10-25 mph in all other areas. Today, snow will end by late morning and skies will begin to clear by this afternoon. Temperatures will warm into the twenties F and winds will continue to blow 15-25 mph from the west-southwest with localized gusts in the thirties. There will be a break in the weather tonight and tomorrow with more snow expected on Tuesday.

Snowpack and Avalanche Discussion

Madison Range Southern Gallatin Range Cooke City

Lionhead area near West Yellowstone

Over the past 48 hours more than a foot of low density snow has fallen in the mountains around Big Sky, West Yellowstone and Cooke City. This recent storm added a fair amount of weight to the snowpack and provided plenty of fresh snow available for transport.

Today wind-loaded slopes will be the primary concern. Slopes leeward to west/southwest winds will be the most likely to contain fresh wind slabs. However, swirling winds have likely deposited snow on all aspects. It's noteworthy that winds remained light in mid to low elevations but have been significantly stronger in upper elevation terrain. Yesterday, the Big Sky Ski Patrol triggered numerous slides during control work that broke 1-2 feet deep and were the result of wind deposited snow.

Add the weight of new and wind-blown snow to the thin layer of facets buried 1-3 feet deep and you have the right equation for an avalanche (**video**, **video**). Yesterday, my partners and I toured into Bacon Rind in the southern Madison Range. We discovered a layer of well-developed surface hoar about eighteen inches below the snow surface. We experienced cracking and collapsing on this layer and received unstable results in stability tests (**photo**).

In other areas this layer is smaller grained facets. Regardless of the crystal shape and size, there is a persistent weak layer buried 1-3 feet deep capable of producing avalanches (**photo**). It's safe to assume this layer exists on all slopes until proven otherwise. It only takes a few minutes to dig down and assess the strength and distribution of this layer – a good insurance policy before committing to steep terrain.

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

Bridger Range Northern Gallatin Range

The mountains around Bozeman have received roughly half the snow of the other areas. This has limited the amount of stress applied to the snowpack. However, the new snow has been very light, making it easy for the wind to transport onto leeward slopes.

Yesterday, skiers near Frazier Basin in the northern Bridgers triggered small soft slab avalanches that were likely failing on a thin layer of facets beneath the new snow. While these slides were not that large, they could pose a threat if triggered in high consequence terrain.

Today, human triggered avalanches will be most likely on steep-wind loaded slopes. Since strong winds have been limited to upper elevation terrain, I expect slopes below ridelines to be the most avalanche prone.

Although wind loaded slopes are the primary concern, facets buried 1-2 feet continue to make avalanches possible on non-wind loaded slopes. This layer has not produced widespread instability, but should always be assessed before committing to steeper slopes.

Today, human triggered avalanches are likely on steep wind loaded slopes that have a **CONSIDERABLE** avalanche danger. All other slopes have a **MODERATE** avalanche danger.

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.

KING AND QUEEN OF THE RIDGE

Saturday, February 15th is the **12th Annual King and Queen of the Ridge** Hike/Ski-a-thon fundraiser to support avalanche education in southwest Montana. Collect pledges for one, two or the most ridge hikes you can do in the five hours of competition. 100% of the proceeds go to the Friends of Gallatin National Forest Avalanche Center. Kids and families are encouraged to hike too! Hike as an Individual or Team. **Make a Pledge** . **Sign Up**. **More Info**.

EVENTS/EDUCATION

February 12, BOZEMAN: Wednesday, 6:30-7:30 p.m., MSU Procrastinator Theater, **Sidecountry IS Backcountry** lecture.

February 22, BIG SKY: Saturday, 10 a.m. – 2 p.m., Beehive Basin Trailhead, **Companion Rescue Clinic**. Space is limited and pre-registration is required. https://ticketriver.com/event/9964

More information our complete calendar of events can be found **HERE**.