GNFAC Avalanche Forecast for Thu Apr 20, 2023

Good morning. This is Alex Marienthal with a spring weather and snowpack update on Thursday, April 20th. The Gallatin National Forest Avalanche Center has stopped issuing daily avalanche forecasts for the season. We will issue weather and snowpack updates twice a week through April. This information does not apply to operating ski areas.

Bridger Bowl is closed, and backcountry conditions exist. There is no avalanche mitigation or ski patrol rescue. In case of emergency, call 911. Please stay clear of chairlifts and other equipment.

Mountain Weather

Since Tuesday evening the Bridger Range received 32-40” of snow, near Big Sky and Hyalite got 10-12”, and since Monday the mountains near West Yellowstone and Cooke City got 6-9”. Wind has been westerly at 5-20 mph with gusts of 15-30 mph. This morning temperatures are single digits to teens F. The next few days forecast is cold and generally snowy with temperatures reaching high 20s to low 30s F through Saturday, then mid-40s on Sunday. Wind will be 15-25 mph out of the west. The mountains near Bozeman and Big Sky are favored for snowfall with 3-5” possible today and 3-7” tomorrow through Saturday. Near Cooke City could receive 3-7” through Saturday and near West Yellowstone might see 2-4”.

Snowpack and Avalanche Discussion

All Regions

This snowpack update is one day early due to yesterday’s snowfall creating very dangerous avalanche conditions in the Bridger Range. The Bridgers received 32-40” of snow equal to 2.5” of snow water equivalent (SWE) in less than 24 hours. Yesterday, as snow rapidly stacked up, skiers at Bridger Bowl noted easily triggered loose snow avalanches which entrained large volumes of snow by early afternoon (**slide on Apron**, **video 1**, **video 2**). Similar avalanches of new snow will be easy to trigger today through the weekend. Slides may become larger and could break naturally as more snow falls and where wind is drifting new snow into denser slabs. The same hazards exist in other mountain ranges, but avalanches will be smaller, though still dangerous, due to less new snow.

During spring, stability of new snow tends to be more variable and unpredictable than what we are used to most of winter, due to factors like firm crusts below or large temperature changes during the day. Before considering travel on any steep slopes, carefully assess the stability of the new snow. When stability assessment is tricky or uncertain, choose conservative terrain. Ride or ski slopes that are less than 30 degrees steep, or non-wind loaded and without consequences of hitting trees or rocks.

When the sun shines and temperatures rise, the new snow will get wet and more unstable, and large avalanches will be easy to trigger or could run naturally. This isn’t expected until later in the weekend, but stability can change rapidly during spring. If you notice the snow surface becoming moist or wet, be ready to change plans, or plan to be away from steep terrain when it receives direct sun and later in the day when temperatures are above freezing.

Other problems to be aware of are large cornices along ridgelines and deeper persistent weak layers. Both are less likely than new snow avalanches this weekend, but they do exist. When temperatures warm, cornices could break easier. Give cornices a wide berth along ridgelines and avoid slopes below them (**Mt. Abundance**,

Northern Madison Range). Avalanches breaking deeper in the snowpack are unlikely where a thick crust formed during last week's extended warm up. However, higher elevation shady slopes might still have this problem, where there is not a thick crust below the recent 1-3 feet of snow. (Deep slabs Northern Madison Range (**1**, **2**), **Southern Gallatin Range**, **Lionhead Area** and **Bridger Range**).

We will issue our next spring snowpack and weather update on Monday, and we will continue to share relevant avalanche and snowpack information on our website and social media. If you get out, please send us your observations no matter how brief. You can submit them via our website, email (mtavalanche@gmail.com), phone (406-587-6984), or Instagram (#gnfacobs).

Info and Reminders

We are updating our **avalanche and weather log** daily and posting relevant changes to the avalanche conditions so you can track the weather and how it affects the snowpack.

Bridger Bowl Ski Area is closed, and ski patrol is no longer performing rescues and making terrain closure decisions for you (**video**).

Hyalite Canyon road is closed for motorized use until May 16.

Events and Education Calendar.

GENERAL SPRING SNOWPACK AND TRAVEL ADVICE

Spring weather can be highly variable and create a mix of avalanche problems. Snow conditions and stability can change drastically from day to day or hour to hour. Anticipate rapid change and plan accordingly. Abundant snowfall over the winter with more spring snow to come makes avalanches possible into summer.

NEW SNOW AND WIND LOADED SLOPES

Spring storms are notorious for depositing heavy amounts of snow in the mountains. Even with a deep and generally stable snowpack throughout the advisory area, heavy and rapid loads of new snow will decrease stability. The main problems to look out for are avalanches breaking within the new snow, wind slabs, and loose snow avalanches. The likelihood of triggering an avalanche spikes during and immediately after snowstorms. New snow instabilities tend to stabilize quickly, but it's a good idea to give fresh snow a day to adjust before hitting big terrain. New snow instabilities can be challenging to assess, and spring storms bond to old snow differently across aspects and elevations. Conservative terrain selection is essential during and immediately following storms. Avoid wind-loaded slopes and slopes steeper than 35 degrees for 24-48 hours after new snow and wind.

New snow can quickly change from dry to wet on a spring day, and stability can decrease rapidly with above freezing temperatures or brief sunshine. New snow may bond well early in the morning and then easily slide later. Wet loose slides are likely during the first above freezing temperatures or sunshine immediately after a storm. Anticipate changes in snow stability as you change aspect or elevation and over the course of the day. An early start is always an advantage. Be ready to change plans or move to safer terrain at the first signs of decreasing stability.

WET SNOW AVALANCHES

Spring and wet snow avalanches go hand-in-hand. Above freezing temperatures, rain, and/or intense sunshine cause the snow to become wet and weak and make wet avalanches easy to trigger or release naturally. Conditions tend to become most unstable when temperatures stay above freezing for multiple days and nights in a row. Avoid steep terrain, and be aware of the potential for natural wet avalanches in steep terrain above you, if you see:

- Heavy rain,
- Above freezing temperatures for more than 24 hours,
- Natural wet avalanches,
- Rollerballs or pinwheels indicating a moist or wet snow surface,
- Or if you sink to your boot top in wet snow.

In general, if the snow surface freezes solid overnight, the snowpack will be stable in the morning and stability will decrease through the day as snow warms up. The snow surface hardness, rate of warming, duration of sunshine, aspect and elevation determine how fast stability will decrease through the day. Be aware that sunny aspects may have a wet snow avalanche danger while shadier slopes still have a dry snow avalanche danger. Getting off of steep slopes should be considered when, or before, the above signs of instability are present. Wet snow avalanches, whether loose snow or slabs, can be powerful, destructive and very dangerous. Conservative terrain choices, starting early in the day, and careful observations can keep you safe. See Alex's recent video, and this article for more spring travel advice.

CORNICES

Cornices along ridgelines are massive and can break under the weight of a person (photo). Prolonged above freezing temperatures and rain make them weaker and possible to break naturally. They can break off suddenly and farther back than one might expect. Cornice falls can also entrain large amounts of loose snow or trigger slab avalanches. Stay far back from the edge of ridgelines and minimize exposure to slopes directly below cornices. Regardless of whether a cornice triggers a slide or not, a falling cornice is dangerous to anyone in its path.

DISCLAIMER

It does not matter if new snow falls or not, avalanches will continue to occur until the existing snowpack is mostly gone. Always assess the slope you plan to ride with diligence and safety in mind. Do not let your guard down. Travel with a partner, carry rescue gear and only expose one person at a time in avalanche terrain.

Have a safe and enjoyable spring and summer!

Doug, Alex, Ian and Dave

For more spring travel advice see this **article** from our GNFAC forecaster blog.