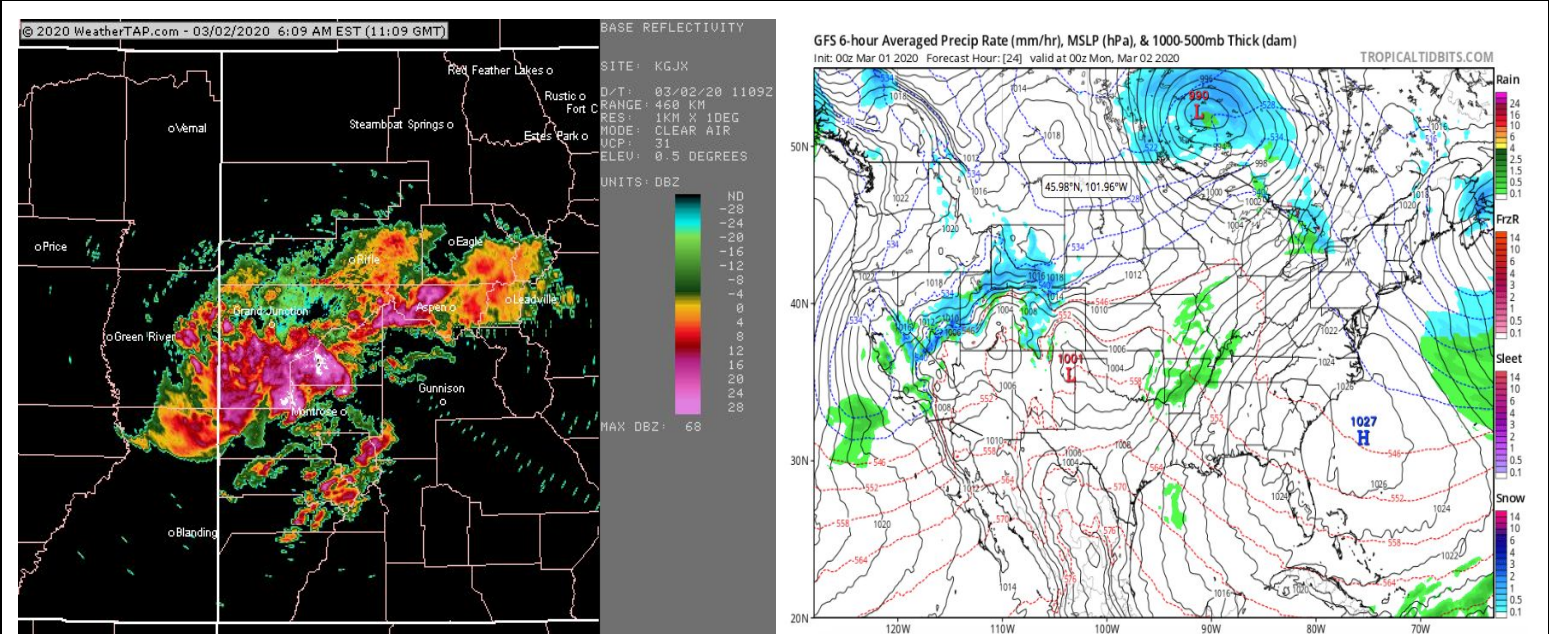


Staff:	Zach Kinler
Week and Year	February 28-March 5, 2020
Backcountry zone:	Crested Butte Area

Notable Weather Events (snowfall, SWE, winds, temps, etc.)



Radar imagery and the GFS 6-hour precip rate forecast for 3/2. A frontal boundary stalled out over the Elk and West Elk Mountains creating a 12 hour period of moderate to heavy snowfall. The boundary is clearly seen on radar and in the forecast map above.

This period began on 2/28 with clear to scattered skies under warm and stable WSW flow. Strong solar pushed freezing levels to above 11K. Similar conditions were in place on 2/29 as the ridge axis passed overhead ahead of a large area of Low pressure moving onshore in the Pacific NW. Mostly clear skies prevailed with only high passing clouds late in the day as the freezing level once again pushed above 11K.

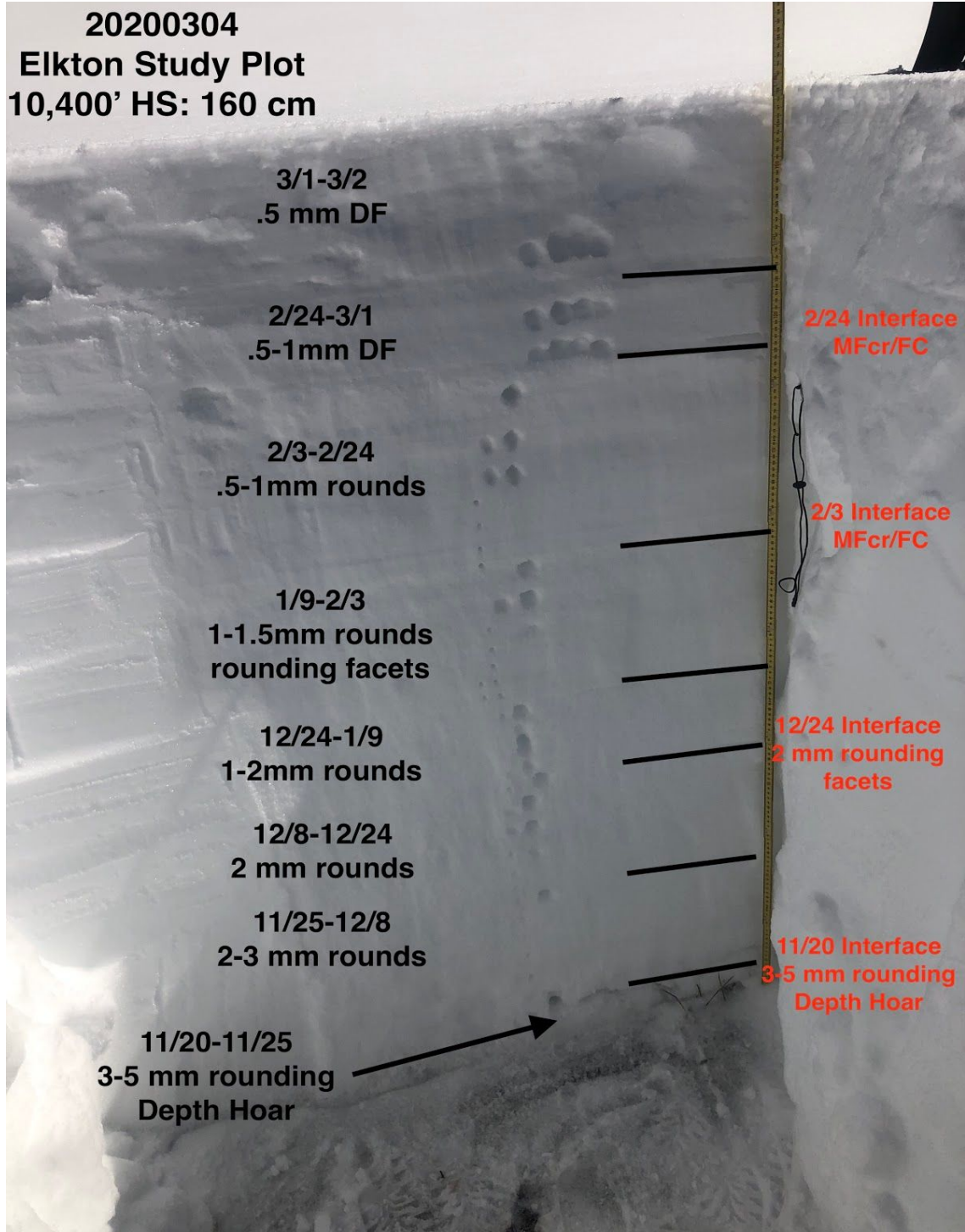
The first day of March came in like a lion despite modest snow predictions. A complicated splitting low sent a closed low South towards AZ while the northern disturbance pushed a cold front in from the NW. The Gunnison valley ended up in a favorable area in between these features as the front stalled overnight and into 3/2. Heavy, wet snow showers fell on the order of 1-4" on 3/1. In the early hours of 3/2, with the front stalled over the area and a colder air mass overhead, we saw our heaviest snowfall event of the season when 10"-16" fell in a 12 hour period. This snowfall was accompanied by moderate to strong westerly winds and temperatures 10-15F cooler than previous days. Clouds and cold NW flow stuck around over most of the high country during the day before skies cleared overnight and into 3/3.

Clear skies and strong solar pushed 11K highs above freezing while light to moderate NW winds continued which kept major warming in check. On 3/4 the warming trend continued under clear skies and light WNW flow. High temps were a few degrees warmer than the previous day under strong solar with freezing levels once again above 11K. On 3/5 this trend continued with clear skies, light NW flow and strong solar. High temperatures above 40F were reached around 11K.

Storm Totals 3/1-3/2

Upper Slate River: 20" snow/ 1.3" SWE
Upper Taylor snotel: 10" snow/ 0.5" SWE
Schofield Pass snotel: 15" snow/ 1.0" SWE
Irwin: 16" snow/ 1.2" SWE
Gothic: 13.5" snow/ 1.0" SWE
CBMR: 13" snow(cam)

Snowpack (weak layer date(s) and status, structure, stability trends)



[Click here for complete profile and test results**](#)**

11/20/19 Interface: Multiple early season storms dropped 1-2 feet of snow throughout our area in October. An extended dry period followed for most of November with warm temps and sunny skies which left the southern half of the compass mostly bare while continuous old snow remained on shady aspects facing N-E from around 10,000 ft. and up. Sheltered areas free of wind and sun harbor the weakest grains. This old snow was buried on 11/20 and is now our layer of most concern. Initially, a thin crust was observed on top of this old snow as seen in this [Paradise Divide Ob](#) with facets and early stage Depth Hoar growing to 4mm underneath. This [Kebler Pass ob](#) highlights this interface and where it was found west of town. Moderate snow and wind loading stressed this layer leading to our first widespread avalanche cycle around 11/30 as seen [here](#). This [Cement Creek Ob](#) shows this layer is more isolated but present at upper elevation drifted spots near and East of town. Check out this [natural avalanche ob](#) from Kebler Pass area highlighting large, persistent slabs failing on this layer. A widespread natural avalanche cycle followed the 12/12 cycle with large avalanches breaking near the ground on this interface. No avalanches were reported to fail on this interface from mid-December through early January until strong northerly winds cross-loaded Westerly slopes near treeline. This put a slab on very weak layers near the ground and led to several large avalanches. While stubborn, large triggers such as [cornice falls](#) have shown this layer to still be a concern and the possibility of smaller avalanches breaking down to this layer remains. This layer is now buried ~150-250 cm deep.

11/25/19 Interface: Following the 11/20 cycle, the area saw 2 days of sunny skies and cold clear nights which effectively melted or crusted the recent snow from the southerlies while near surface facets and large grain Surface Hoar were able to form on the northern half of the compass. This weak snow is observed on the surface in this [Photo](#) and this [Photo](#). A ski cut released a very small avalanche on this layer in this [Ob](#), and time will tell if this layer remains active with additional loading. At the [Elkton Study Plot](#) on 12/4, propagating results were observed on this layer as the slab on top has settled into a 1F slab with warmer temps. On 12/5 a [rider-triggered D2](#) avalanche failed on this layer. This interface is near the ground where October snow did not exist, and rests on melt forms or large grain facets where snow remained from October. On 1/8 at the Elkton Study Plot, further rounding of the 2 mm facets was observed as well as consolidation into 1F hardness from 4F. On 2/26 this interface was Pencil hard melt forms and rounding facets, well sintered. This interface is generally ~100-150 cm deep.

12/24/19 Interface: After a week of sunny and warm weather, crusts formed on south aspects as well as small surface hoar and near surface facets on the shadier aspects. On 12/26 at the Elkton Study Plot, 1 mm near surface facets were observed at this interface with CT9 Q3 results and ECTN10 results. This [Kebler Pass ob](#) and this [Coon Basin ob](#) highlight this interface on southerlies while this [Paradise Divide area ob](#) illustrates the issue on shady aspects. On 1/1 at the Elkton Plot, this layer was observed as 1.5 mm near surface facets 28 cm below the surface with 1.5" SWE resting on top and hard Q2 CT results. Non-propagating ECT results were seen in this [ob](#) and on 1/8 at the Elkton Study Plot CT and ECT test revealed no failure here while a PST (40/100) SF was observed. Rounding and sintering of grains is occurring in these areas. PST END results less than 50 cm were observed the last three weeks at the Elkton plot on this interface which remains somewhat weak. Several human-triggered avalanches in the upper snowpack this week point to this layer as a possible culprit. This large [scary avalanche](#) is the most recent evidence of this weak interface. PST results on 2/26 on this layer were PST 75/100 (END) with continued rounding. It is now buried ~70-120 cm.

1/9/20 Interface: Following the New Year's storm, skies cleared Colorado style with very cold nights and sunny skies during the day with freezing level pushing to 11K. This created thin crusts on southerly slopes while near surface facets and surface hoar formed on shady slopes. This [Kebler Pass area ob](#) highlights this layer on each side of the compass. This [Paradise Divide ob](#) documents propagating ECT results on a crust/facet combo. This interface is a scary [Surface Hoar](#) layer which produced an intentionally triggered avalanche in the Anthracite range on 1/13. Recent human-triggered avalanches in the upper snowpack point to this layer as the culprit. On 2/26 at the Elkton plot site this layer continues to show rounding and sintering with neighboring slabs with no alarming results on short and long column test. This layer is buried ~60-100 cm.

2/3/20 Interface: Temperatures the first 2 days of February were well above average with 2/2 being the warmest day of the season. This led to the formation of crusts on many slopes from E-S-W. This was followed by some of the coldest temperatures of the season promoting faceting around the crust. CBAC staff documented this layer in this ob from a [West aspect](#). This [observation from NNE aspects](#) highlights this layer on the shady side of the compass as 1 mm facets. Following the 2/6-2/7 cycle this [Ruby Range ob](#) shows several large avalanches likely initiating on this interface, with some of them stepping down. Recent [very large avalanches](#) on south aspects appear to be failing near this interface in the upper snowpack and stepping down. This [Crested Butte area ob](#) from 2/27 shows stubborn but

not unreactive results on this layer below treeline. This layer is buried ~40-80 cm.

2/24/20 Interface: On 2/23 a closed low tracking overhead produced ~6" of snow around the area before skies cleared allowing the late February sun to form a crust. On 2/24 a shortwave trough moved through in NW flow bringing a very strong cold front with it. An additional 2"-6" of very low water content snow fell before temperatures plummeted to well below 0F. This very cold period quickly faceted that new snow which is resting on a crust on the southern end of the compass. On 3/4 at the Elkton Study Plot, ECTP 17 results and PST 30/100 (END) were observed on this layer which was buried 33 cm.

Avalanches



Many of the incremental loading events this season have pushed certain west aspects to failure. Here is this week's version from Teocalli Mt.



A large avalanche on the east end of Gibson Ridge. This ran during the day on 3/2 as the sun heated fresh storm snow.



This large storm slab avalanche in Climax Chutes likely ran early on 3/2 and sent low density debris quickly through the track and into the runout.

This week saw the avalanches start rolling again as we got our largest single loading event of the season when an inch of water fell in a 12 hour period. This high precipitation event produced numerous D1-D2 storm slabs which appeared to fail during or just after peak instability. Numerous D1 loose snow avalanches ran during this time as low density snow shed naturally. Skies cleared on 3/3 revealing a variety of wind slabs, additional storm slabs and a few persistent slab avalanches. Many of the wind and storm slabs were small (D1-D1.5). Two notable large avalanches pictured above were an east aspect below tree line on Gibson Ridge and a west aspect near tree line on Teocalli Mt. These avalanches highlight the poor structure we have on certain slopes near and east of town. As warming continued in the days following the recent snow, there were numerous loose wet avalanches. Most of these remained small (D1) and on aspects E-S-W.

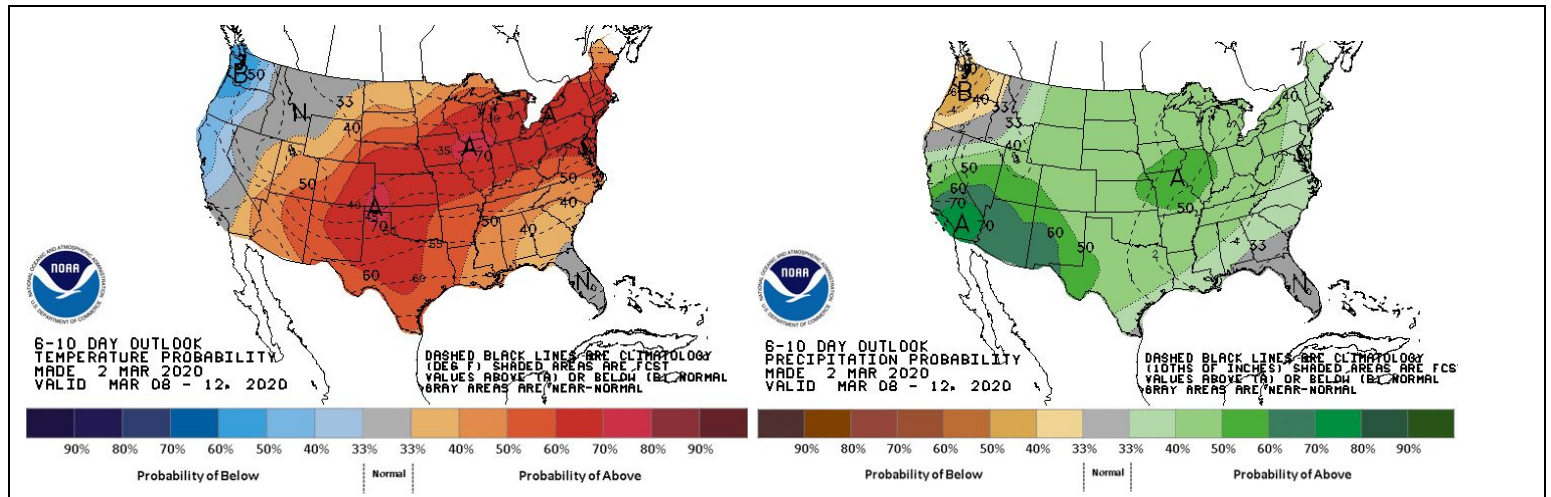
Incident, accidents, close calls

On 3/3 an observer reported a skier-triggered avalanche above Long Lake near the Washington Gulch TH. A [site visit](#) by CBAC and CAIC forecasters on 3/4 sheds some light on the close call where a solo skier entered the slope from the ridge above the lake. After skiing the first pitch without incident, the skier made their way through an aspen stand and onto the next pitch which is a steep slope directly above the lake. Just after leaving the trees and entering the slope, the skier triggered a large (D2) avalanche from the looker's left side of the path which appears to have carried and partially buried the skier just off the banks of the lake. Tracks were observed leaving the debris as this skier is very lucky to be alive. Debris was 280 cm deep, punching through the ice and propagating cracks across the lake. There is no information available from the skier or any witnesses to the event.



Large skier triggered avalanche at Long Lake. Forecaster in this picture has a 280cm probe into the debris which punched into the lake.

Comments (anything unusual/noteworthy, thoughts on the near future)



The upcoming week is advertising storminess and above average temperatures in the SW US with moisture pushing towards Colorado. Timing and track of upcoming storms will influence how much and when snowfall occurs. With the polar jet just to the north and subtropical jet just to the south, the potential exists for more accumulating snowfall as moisture interacts with the mountains and possibly cooler air.