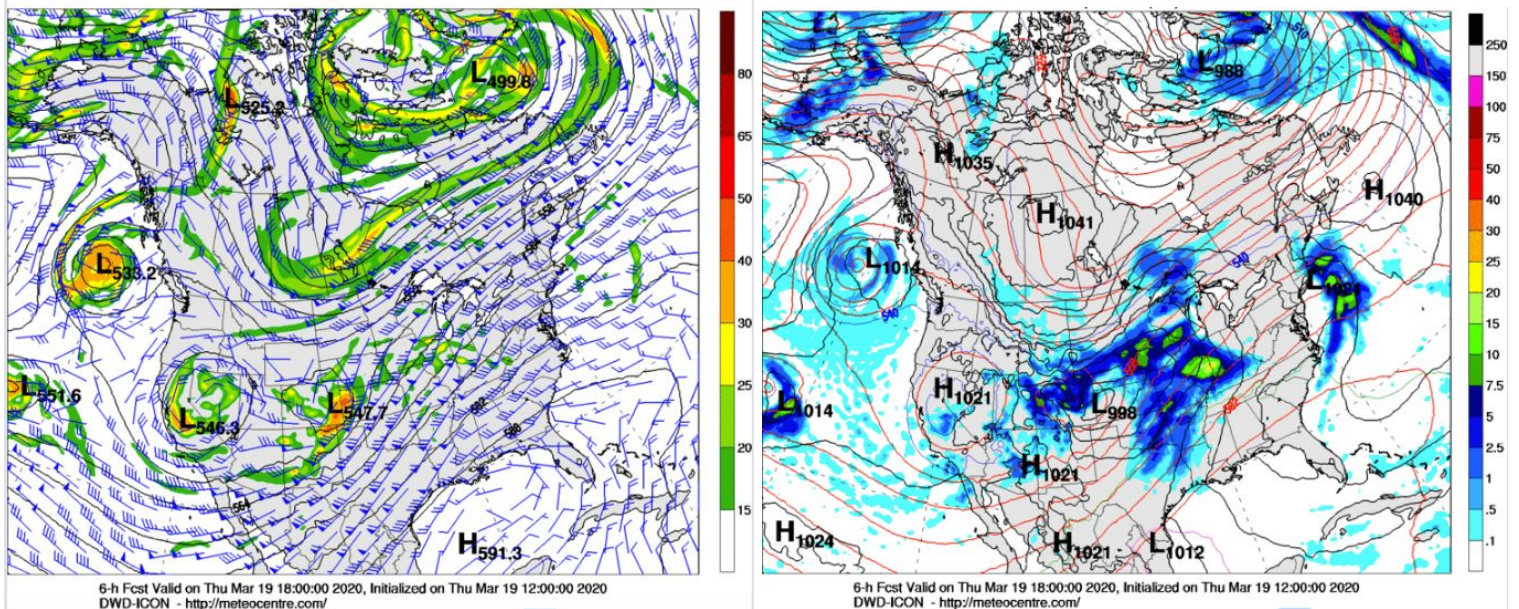


Backcountry Weekly Summary

Staff:	Zach Kinler
Week and Year	March 13-19, 2020
Backcountry zone:	Crested Butte Area

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



Graphics from 3/19 showing vorticity(left) and precipitation(right) associated with a complex Low pressure system which split over the Great Basin and tracked directly over Colorado. Abundant moisture and decent lift produced one of our heaviest hitting storms of the winter.

This period began on 3/13 with a closed Low moving towards Colorado and opening up into a shortwave leading to overcast skies with a few peeks of sun. Snow showers accumulated 1-4" above 9K with wet snow/light rain below 9K and little accumulation. SW winds were on the increase blowing 20-30 mph and gusting to 60 mph. 11K highs were just above freezing. Overnight on 3/14 an additional 1-3" of snow fell with SW winds 15-30 mph gusting to 60 mph. Lows were in the upper 20s in the valleys and 15-20F for mountain locations. Partly to mostly cloudy skies with continued SW winds of 10-20 mph gusting to 40mph and 11K highs around the freezing level were observed. A solid overnight freeze occurred on 3/15 with most mountain locations dropping to ~20F. Calm winds in the am transitioned to light and variable pm breezes. Under partly cloudy skies, 12K temps remained below freezing while below 12K, highs were in the 30s and lower 40s. On 3/16 there was a strong overnight freeze under clear skies with mountain locations in the low to mid 20s outside of a few outliers which remained near 30F. Skies were mainly clear allowing strong solar to push temps to the warmest of the period. 11K highs were in the mid to upper 40s with very light breezes. 3/17 was another warm one under partly cloudy skies and light to moderate south winds which increased in the am. With passing clouds and wind, highs were moderated a bit from the previous day with 11K temps in the lower 40s.

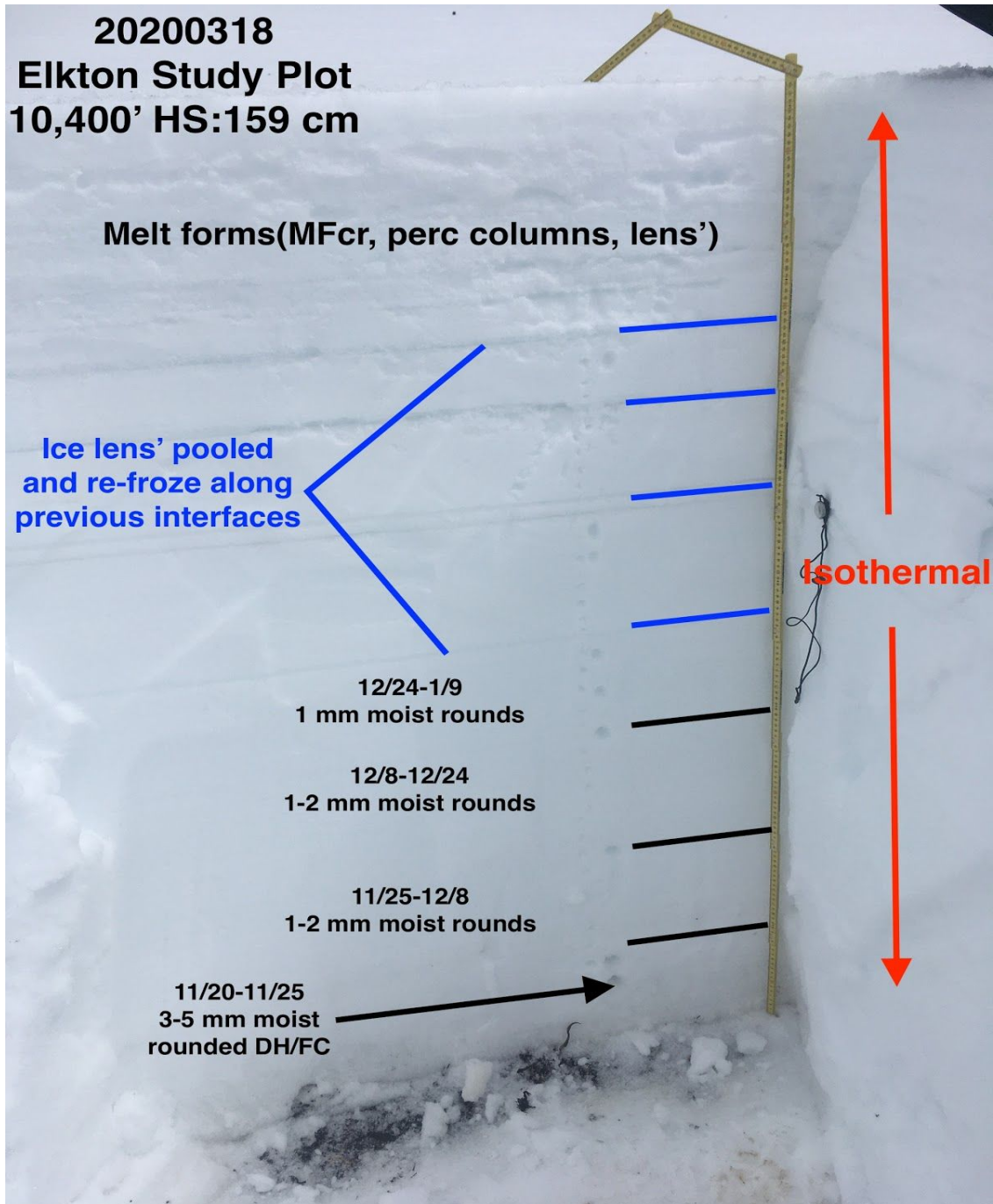
On 3/18 a large Low pressure system to our west split with the southern branch being slung around the main low and began to push moisture into our area. Mostly cloudy skies with breaks of sun and increasing southerly winds followed. Temperatures trended down once again from the previous day due to the clouds and wind with 11K highs remaining in the 30s. A few graupel showers passed through however there was no measurable precipitation. 3/19 was a storm day as the first of the recently split Lows tracked directly overhead bringing strong lift and abundant

moisture. Light southerly winds transitioned to strong westerly winds blowing 20-30 mph and gusting to 60 mph. Heavy snow on the tune of S5-S10 fell between 05:00 and 08:00 with the initial surge of moisture and lift in south flow. Light to moderate snow continued throughout the day as wrap-around moisture on the backside of the system kept snow falling into the evening hours under west flow. Highs were in the upper 20s to near 30F.

3/19 Storm Totals

Schofield Pass snotel: 15" snow
Anthracite Range: 20" snow/1.4"SWE
Butte snotel: 12" snow/0.9"SWE
Gothic: 11" snow/.87"SWE
Town of CB: 12" snow

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



[Click here for full 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](#) or a major loading event are likely the only thing that will awaken this layer. 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. A major loading event or large triggers from cornice falls will likely be the only way this layer remains active. 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. Given the depth and warming trend, facets around this layer are much less sensitive and not expected to be reactive. 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. Given the depth and warming trend, facets around this layer are much less sensitive and not expected to be reactive. 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. On 3/11 on a [NE slope below tree line](#), moderate propagating results were observed on this layer which is slightly moist but 2 mm facets are soft and weak. While currently unreactive, a large loading event may bring this layer back into play especially in snowpacks less than 150cm. 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. Recent warming and free water has led to rounding and sintering of this layer on solar aspects while no evidence exists on the shady aspects of any issues at this interface. On 3/18 at the Elkton Study Plot, melt water had pooled along this layer and re-froze forming an ice lens with no test results.

Avalanches



This D1.5 Wind Slab was observed on 3/15 after a couple rounds of light snow and westerly winds.

Avalanches during this week were generally small and confined to new snow and surface instabilities brought about by warming of the upper snowpack. After light accumulations and wind on 3/13 and 3/14 we saw very isolated, small wind slabs as well as small wet loose activity on steep southerly slopes once the sun warmed recent snowfall. As temperatures increased through the week, we saw continued isolated and small wet loose avalanches develop on steep slopes on the southern side of the compass. All were size D1 and relatively harmless to humans remaining on the surface without entraining large amounts of snow below. Despite another round of above average temperatures and sunshine, the snowpack is transitioning very well this spring with gradual warm-ups, strong overnight freezes and surfaces that have now gone through multiple melt/freeze cycles.

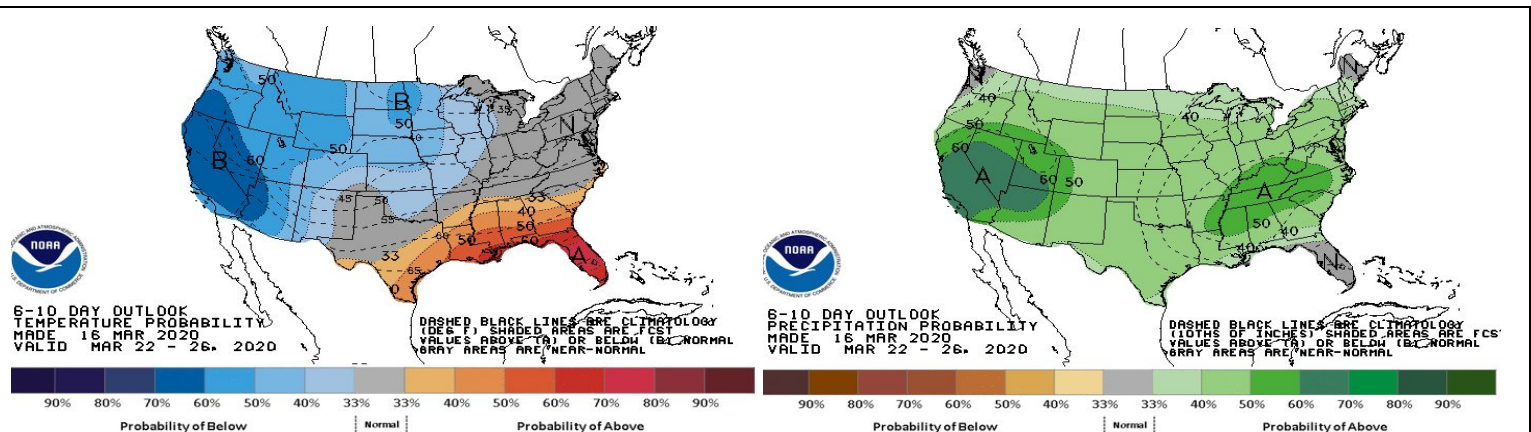


An isolated cornice fall was able to pull out a slab avalanche from this steep, rocky and thin snowpack. As temps continue to climb this spring, large cornices looming over easterly slopes will begin to weaken.

Incident, accidents, close calls

This week there were no incidents, accidents or close calls reported to the CBAC.

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



Some classic spring weather treated us to balmy temps, sunshine and eventually a return to winter with strong winds and heavy snow as yet another cutoff Low made its way down the coast of California and through the Great Basin towards Colorado. The extent of the recent avalanche cycle is unknown at time of publication however we expect to see some large avalanches once skies clear. The week ahead looks quite similar as we will again see a Low pressure system drop down the west coast and make its way towards Colorado. Is it groundhog day?