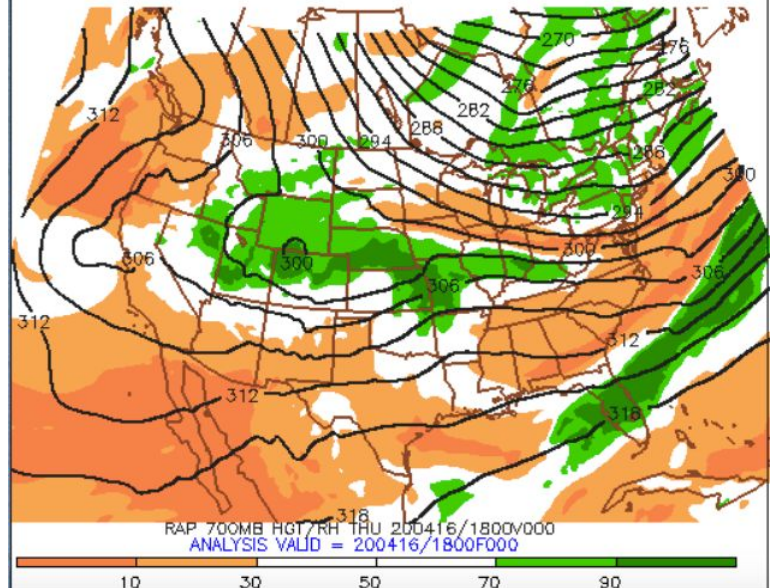
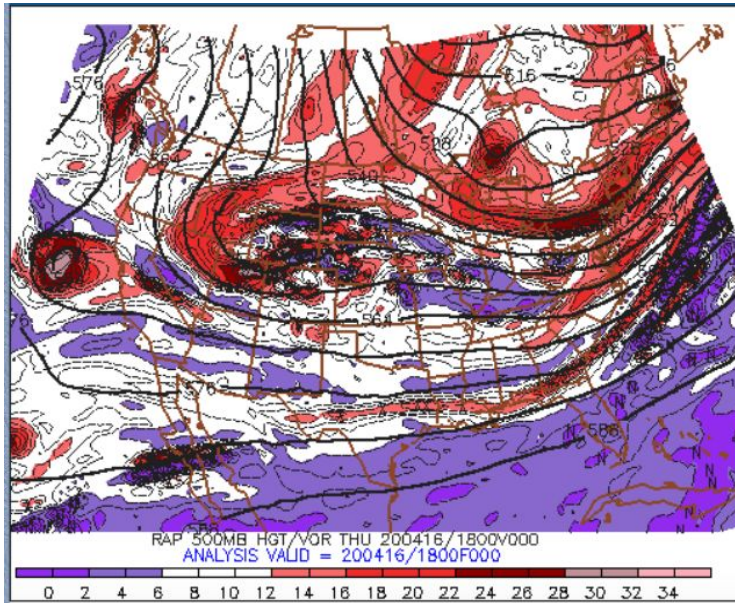


# Backcountry Weekly Summary

Staff:	Zach Kinler
Week and Year	April 10-16, 2020
Backcountry zone:	Crested Butte Area

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



**500 and 700 mb RAP maps showing the 4/16 shortwave trough and associated moisture as well as the next little weather maker off the coast of California in the form of a closed Low.**

This period began on 4/10 with overnight clouds and passing snow showers clearing by morning. Lows trended cooler, in the mid to upper 20s and freeze duration a few hours longer than the previous night. Winds were light and variable. Partly to mostly cloudy skies were observed during the day with clouds favoring areas east and south of town. 11K highs were in the upper 40s with freezing level just below 12K. The cooling trend continued on 4/11 with 11K lows in the low to mid 20s for 10+ hours. Clear skies and westerly winds of 10-20 mph gusting to 40 mph were observed. Highs trended a few degrees cooler around the area with freezing level dropping down to 11.5K under continued westerly winds. Clouds and snow returned on 4/12 with 2-6" of accumulations overnight and light snow showers lingering into the morning. There were westerly winds blowing 15-25 mph and gusting into the 40s with 11K lows in the mid-20s. Skies became partly cloudy during the day with winds increasing to 20-30 mph gusting into the 50s from the west. 11K highs were around freezing.

The cooling trend continued on 4/13 as an elongated trough of low pressure stretching from the west coast across much of the lower 48 pushed cold air southward over Colorado. 11K lows were near 10F while westerly winds of 20-30 mph were a result of a strong jet stream remaining overhead. Skies were mostly cloudy and 11K highs remained in the low 20s as flow transitioned to the NW. A reinforcing shot of cold air pushed through overnight into 4/14 with 11K lows dropping below 0F as the cooling trend continued. Winds eased a bit but were still blowing 10-20 mph and gusting to near 30 mph. Sunshine dominated lower elevations while orographically driven clouds hung over the high country. 11K highs were in the mid 20s. Winds migrated back to the west on 4/15 ahead of an approaching shortwave trough drawing in Pacific moisture and a warmer air-mass. Winds were in the 20-30 mph range with gusts to near 40 mph. 11K lows were around 10F and clouds increased throughout the day with very light snow showers beginning to fall over the highest terrain. 11K highs rebounded into the mid 30s as flow shifted SW. On 4/16 the

trough and associated cold front pushed through the area with clouds, wind and snowfall throughout the day. 11K lows were in the lower 20s while westerly winds elevated once again blowing 20-30 mph with gusts to 80 mph on Scarp Ridge. Snow showers with moderate to heavy bursts of snow were common under mostly cloudy skies. 11K highs were in the upper 20s. 8-16" of snow fell in the favored areas north and west of town with higher amounts as you moved north towards Schofield Pass.

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

**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 5mm 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. The recent extreme wind event on 3/24-3/26 built large and sensitive cornices which proved to be the necessary trigger to wake these layers up. A very large and destructive [D3 avalanche cycle](#) followed. Recent warming during the previous weeks led to an increase in cornice falls which were capable of triggering avalanches on these layers however the last deeply breaking avalanche occurred around 4/6.

**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. Grains at this interface are 2-3 mm rounding FC/DH. 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. The recent extreme wind event on 3/24-3/26 built large and sensitive cornices which proved to be the necessary trigger to wake these layers up. A very large and destructive [D3 avalanche cycle](#) followed. Recent warming during the previous weeks led to an increase in cornice falls which were capable of triggering avalanches on these layers however the last deeply breaking avalanche occurred around 4/6..

**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.

**3/18/20 Interface:** Abundant sunshine in warm southerly flow on 3/16 and 3/17 pushed 11K highs into the mid and upper 40s forming crusts around the compass on all but due north aspects at upper elevations. These crusts varied from razor thin on northerly to thick and supportive on southerly aspects. Heavy snowfall and colder temperatures buried these crusts with facets forming [above](#) and [below](#) crusts with the facets above the crust being larger and more sensitive. Following the above-linked avalanche in Red Lady Bowl, a complex avalanche on [Gothic's East Face](#) likely stepped down to this layer. This [Carbon Pk](#) avalanche released on this layer as well. The facets on top of this crust appear to be the most sensitive at this point and will continue to be stressed by additional snowfall and winds this week. Recent warming and this [Upper Cement Creek](#) observation on 4/1 indicates this layer is healing with rounding of facets above the crust. This layer may still be a concern as water makes its way into this interface as seen on this [NE aspect](#), especially at upper elevations and on the northerly half of the compass where wetting has not occurred.

## Avalanches

Avalanches this period remained on the small side and were related to warming as well as small amounts of new snow and wind. As we moved from above average temperatures to below average and a return to winter we saw the Wet Loose concerns of last week waning while new snow instabilities related to wind transported snow were on the increase. Upper elevation terrain near and above tree line on the east half of the compass saw the most loading and subsequent avalanche cycle which proved to be small and isolated. New snow amounts were not great enough outside of drifted locations to cause any avalanche concerns.





**Many small Wet Loose avalanches on steep southerly facing slopes occurring during the warmest part of the last week.**



**Small Wind Slab avalanche following a modest storm with strong westerly winds as we saw a return to snow and colder temps.**

## Incident, accidents, close calls

There were no incidents, accidents or close calls reported to the CBAC this week.

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

