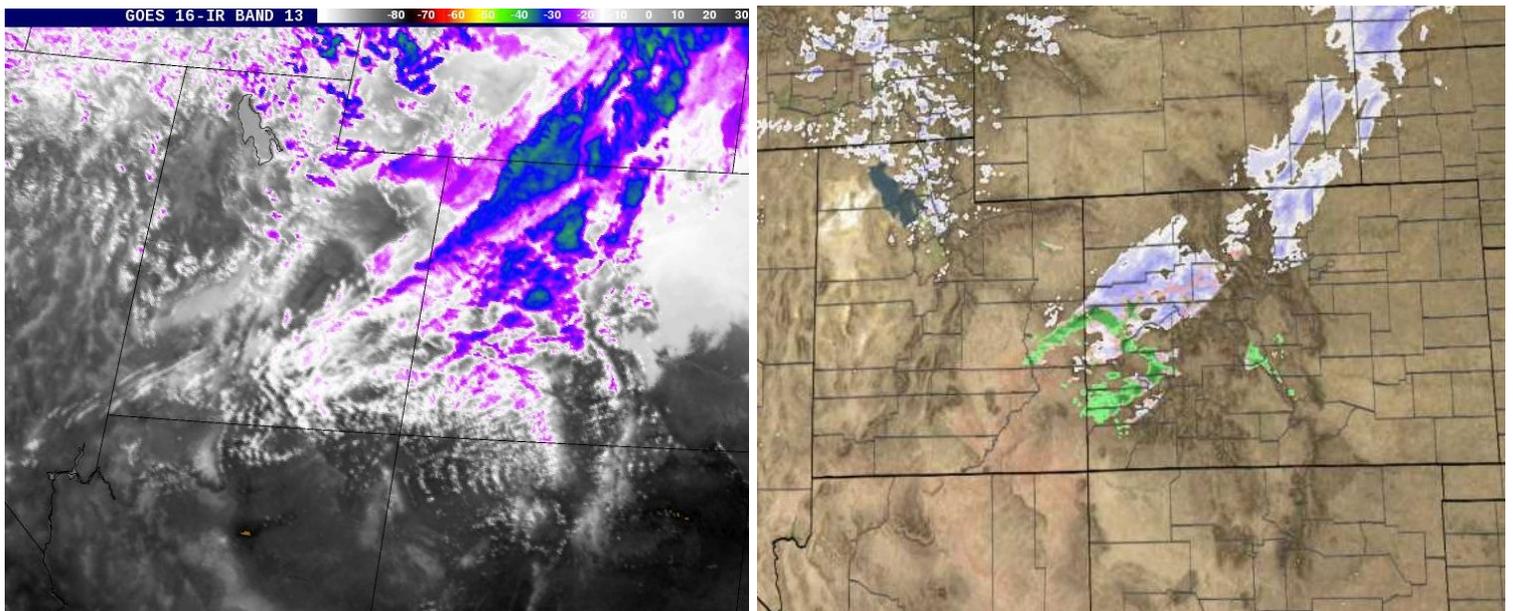


# Backcountry Weekly Summary

Staff:	Zach Kinler
Week and Year	March 27- April 2, 2020
Backcountry zone:	Crested Butte Area

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



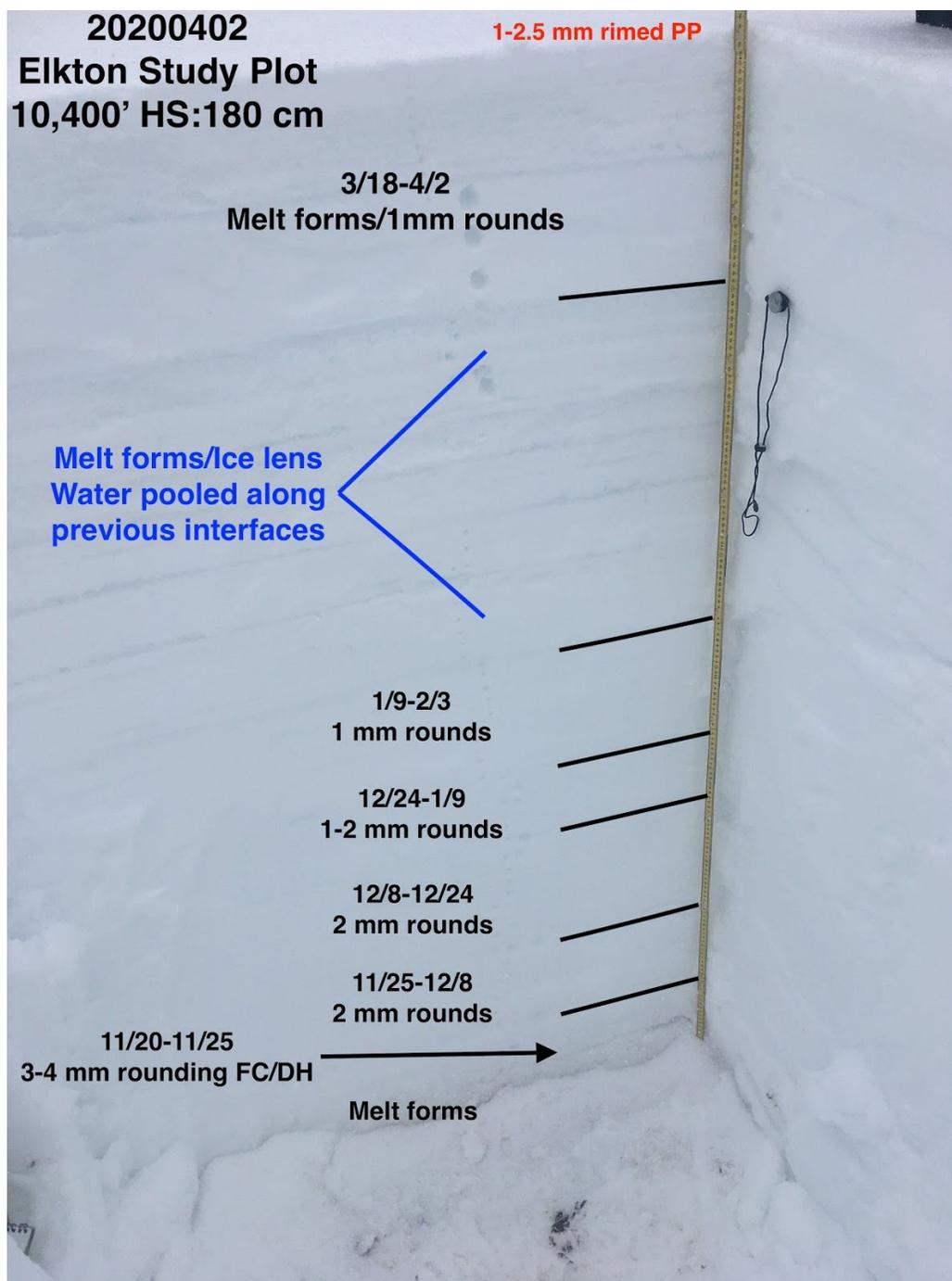
**Satellite and Radar imagery showing the second mid-level trough and cold front moving through our area this week. This was yet another week with multiple small storms bringing modest snowfall and high winds.**

This period began on 3/27 with the elongated trough and associated jet stream responsible for the prolonged wind event finally moving east of Colorado. SW winds shifted to the west then northwest as the trough axis passed. Cinnamon Mt winds remained at a sustained 20-30 mph with gusts to 50 mph while Scarp Ridge dropped off to 10-20 mph gusting to 40 mph. Most mountain locations above 9,000' remained below freezing. Light to moderate snow began falling around 14:00 and continued into the overnight hours. Snow showers continued through the overnight and into the morning on 3/28 as the trough moved east of Colorado leaving colder NW flow in its wake. Mostly cloudy skies with a few breaks of sun followed. Low temperatures were the coldest since late February, dropping to around 0F for most mountain locations. 6-12" of snow fell at higher elevations with the Kebler Pass area favored. WNW winds of 10-15 mph gusted to 30 mph. High temperatures remained below freezing at all mountain locations.

On 3/29, mostly clear skies gave way to increasing clouds mid-morning ahead of yet another shortwave trough. Overnight lows were cold, generally 0-10F under NW flow. Winds shifted southerly and decreased during the day blowing 5-10 mph with gusts to 20 mph. Light snow began to fall by late afternoon with freezing level around 11K. 3/30 saw moderate snowfall moving in just before sunrise as a mid-level trough passed over. Light and variable winds overnight and 11K lows around 20F were observed. 2-6" of snow fell across the zone. Scattered to Broken clouds and light NW wind developed as a mix of sun, clouds and snow showers made for a classic spring day. 11K highs reached the upper 30s.

On 3/31, partly cloudy skies overnight gave way to mostly clear skies during the day with strong solar leading to efficient warming. 11K lows were around 20F and WNW winds increased to 20-30 mph gusting to the 40s. 11K highs made it to the lower to mid 40s with freezing levels near 12K. April Fool's day brought us clear skies initially before clouds drifted back in, no joke! Valley lows dropped to around 20F while mountain locations remained in the mid to upper 20s. Winds shifted SW in the 20s gusting to 40+ trending stronger through the afternoon. 11K highs were once again in the mid 40s. We wrapped up the period on 4/2 with overcast skies and SW winds ahead of another mid-level trough and associated cold front dropping in from the NW. This led to sustained SW winds of 20-40 mph gusting to 60 mph with frontal passage. Snow showers began around 12:00 with 2-5" of accumulations.

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



[\*\*\\*\\*Click here for the 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 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.

**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.

**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.

## Avalanches



One of several large cornice falls this week. This event occurred near the Red Lady skin track.



**Small wind slab following the snowfall and westerly winds on 3/28**



**Multiple small Wet Loose avalanches occurring on steep southerly slopes following a brief warming trend this week.**

Avalanche activity mellowed out a bit this week following a D3 avalanche cycle initiated by extreme winds last week. Modest amounts of snow, strong winds and warming led to Wind Slabs, Wet Loose and Cornice fall avalanches this week. All avalanches were D1-D2 in size. Wind slab issues were generally on NE-E-SE aspects near and above tree line, Wet Loose activity was generally on steep slopes facing E-S-W and Cornice falls were generally confined to leeward NE-E aspects above tree line.

