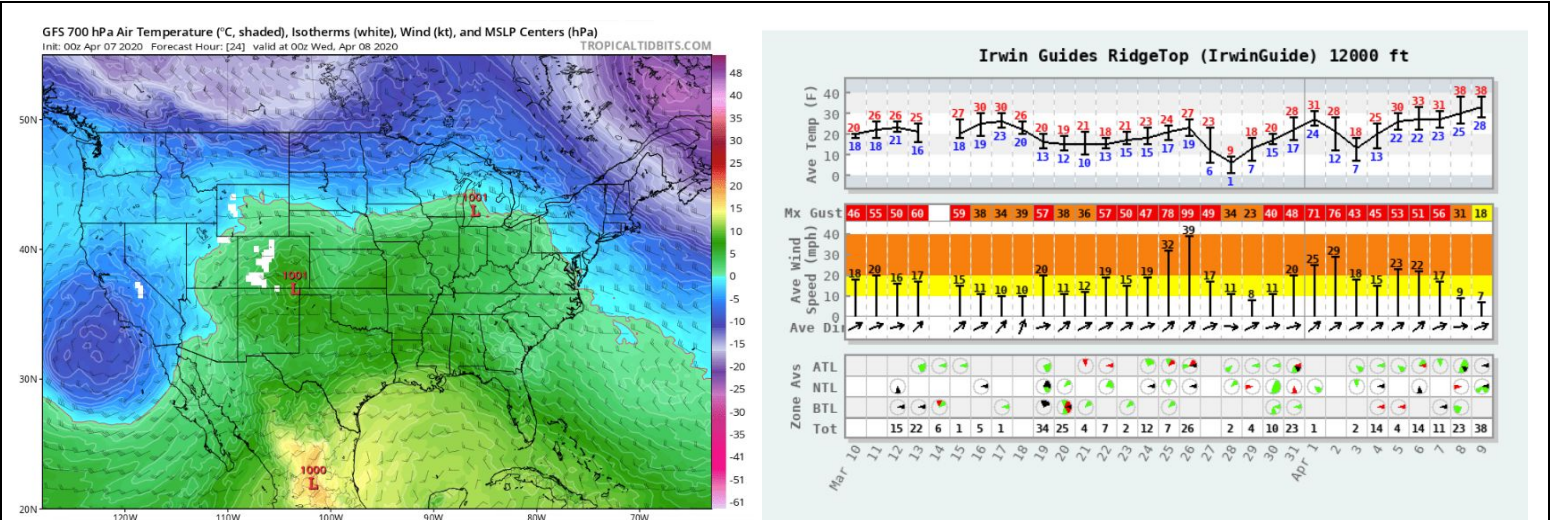


Backcountry Weekly Summary

Staff:	Zach Kinler
Week and Year	April 3 - April 9, 2020
Backcountry zone:	Crested Butte Area

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

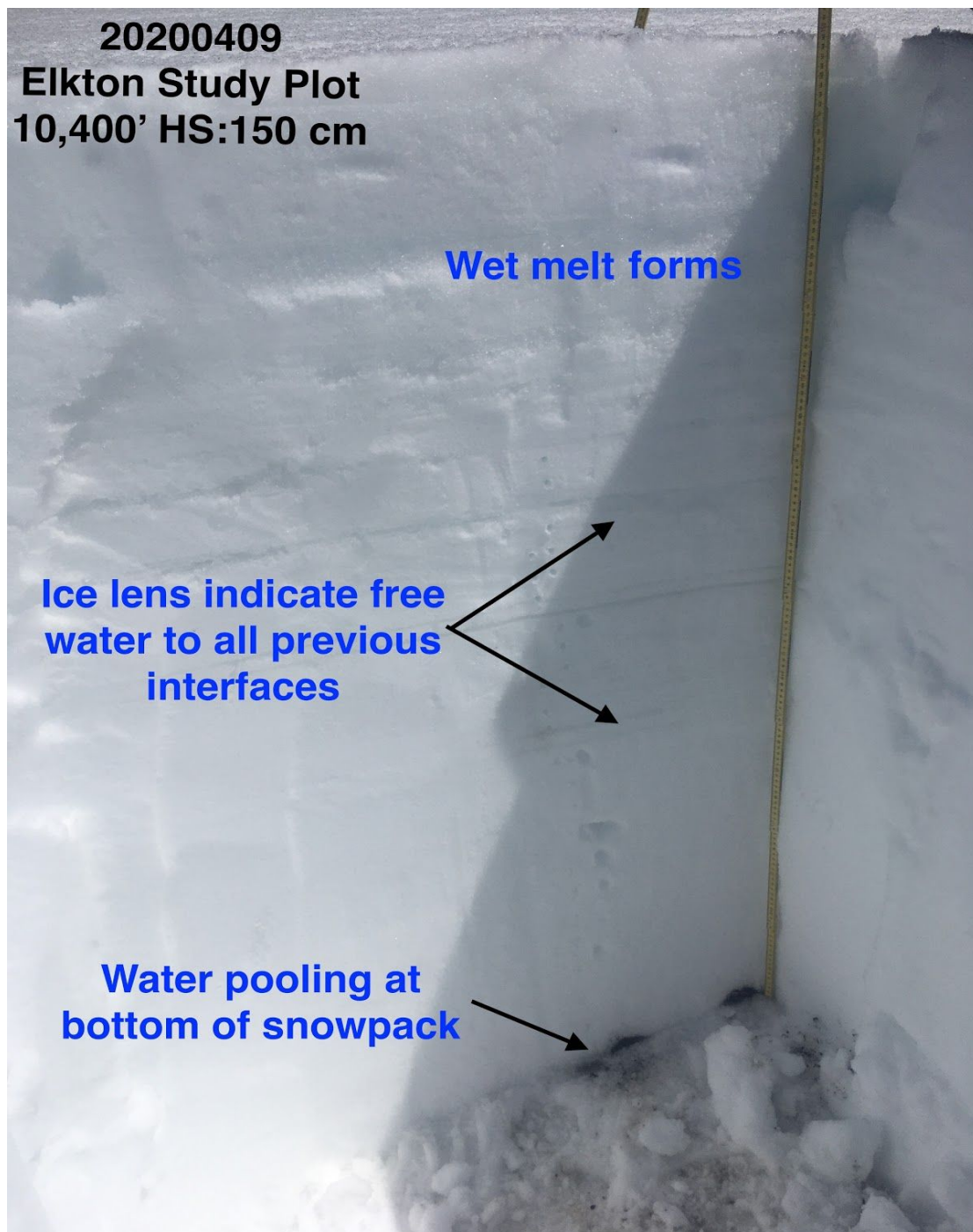


Temperatures soared this week. 700 mb temp chart on the left showing an above freezing air mass being drawn into Colorado by flow around a colder low near the CA coast. On the right is the meteo log from Scarp Ridge at an elevation of 12,000' with temps soaring above freezing and a decreasing wind trend this week.

This period began on 4/3 with cool and dry zonal flow in place following a departing shortwave. Clouds drifted through occasionally under WSW with winds 10-20 mph, gusting to 30 mph. Valley lows were around 20F and 11K lows around 10F. 11K highs made it to around freezing. Winds migrated towards the SW on 4/4 with overnight lows trending up around 10F from the previous night. SW winds remained 10-20 mph with gusts into the 30s with high clouds helping to cap the cooling. 11K lows were around 20F. Clouds remained for most of the day with some clearing around 16:00. Freezing level pushed to 11.5K. The warming continued on 4/5 as high clouds overnight and warm SW flow kept freezing level as high as 10K. Winds increased slightly blowing from the SW as mostly cloudy skies in the am gave way to partly cloudy skies in the PM. Freezing level elevated to just under 12K.

On 4/6, skies cleared as a cut-off low crept down the coast of CA keeping our area in warm moist southerly flow. 11K lows were in the low to mid 20s with 6-12 hours of freeze overnight. Abundant sunshine during the day brought 11K highs into the upper 40s and freezing level above 12K. Moving into 4/7, overnight lows were some of the warmest of the period near 30F at 11K with a few stations between 9,300 ft and 10,500 ft remaining above freezing. Around 11K, freeze duration was several hours shorter than the previous day, around 6 hours. Flow switched west during the day with winds easing just a bit blowing 10-20 mph at ridgeline. Sunny skies brought 11K highs into the upper 40s with freezing level near 12K.

Clear skies remained under west flow on 4/8 with a slightly stronger freeze than the previous night. 11K lows were in the mid-20s and freeze duration was 6-12 hours. Winds decreased throughout the day with 11K highs rebounding to near 50F and freezing level around 12K. 4/9 was the warmest day of the winter with yet another weak overnight freeze where 11K lows dropped to the upper 20s while 12K lows barely dropped below freezing for less than 6 hours. A shorter duration freeze was observed at all elevations, less than 6 hours. Ample sunshine early led to soaring temperatures with 11k highs above 50F and highs above 40F on Cinnamon Mt at 12,300 ft. Afternoon convective clouds did little to limit heating.



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 has led to an increase in cornice falls which are still triggering avalanches on these layers.

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 has led to an increase in cornice falls which are still triggering avalanches on these layers.

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.

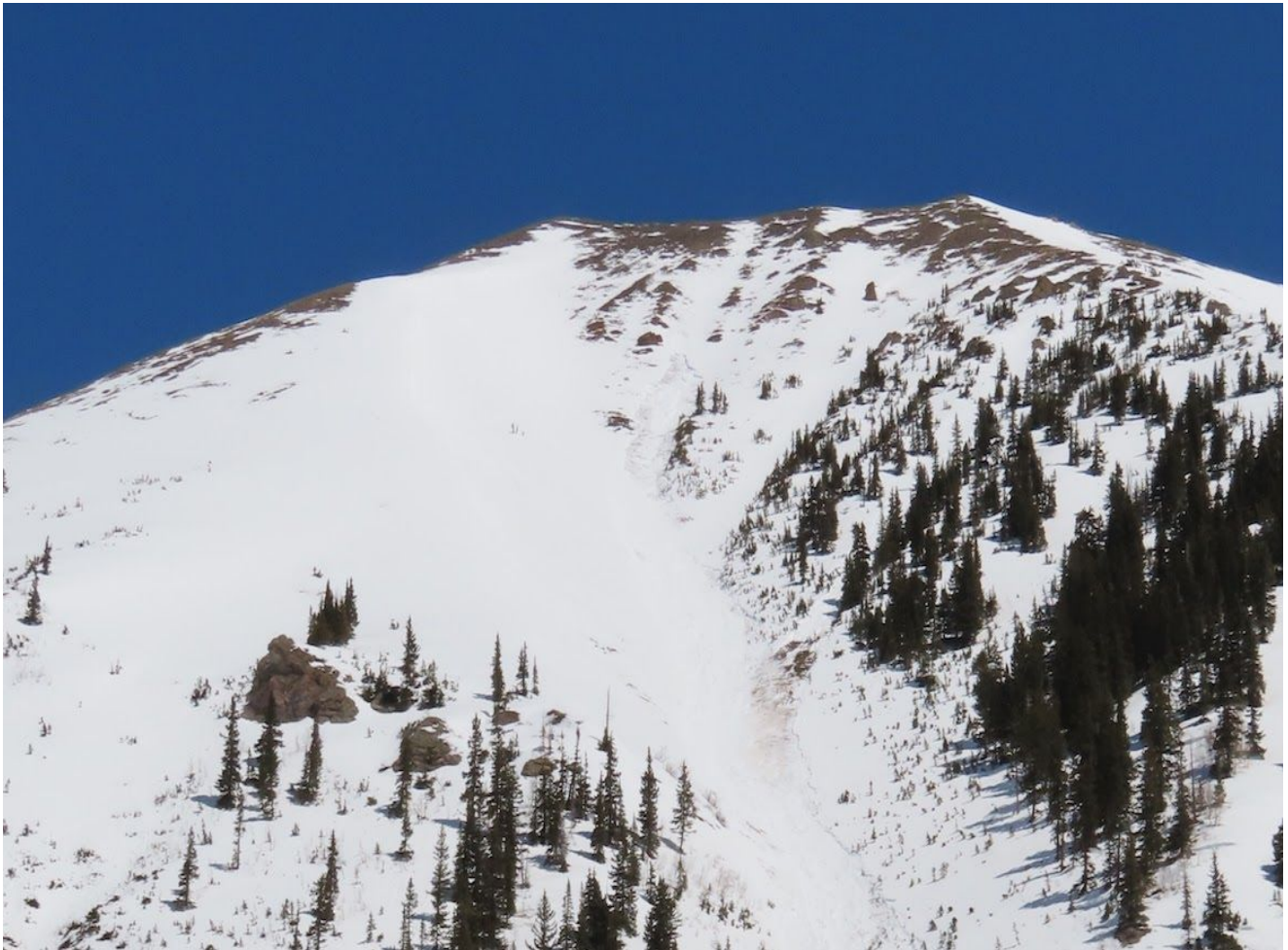
1/9/20 Interface: Following the New Year's storm, skies cleared Colorado style with very cold nights and sunny skies during the day with freezing level pushing to 11K. This created thin crusts on southerly slopes while near surface facets and surface hoar formed on shady slopes. This [Kebler Pass area](#) 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 free water has begun making its way into this interface as seen on this [NE aspect](#) this week.

Avalanches



This Wet Slab avalanche ran on 4/7 from a west aspect of Gothic Mt. It began as a smaller loose avalanche but quickly stepped down and propagated into weak layers near the ground producing a large avalanche.



A large Wet Slab avalanche on a SE aspect near Rustler's Gulch around 11,800'. This avalanche was observed on 4/9.



Another large Persistent Slab avalanche released on an east aspect above treeline. This avalanche occurred around 4/6.

This was an active period for natural avalanches of different varieties, with all events related to warming of the snowpack. Daytime temperatures soared to 50F at 11K with weak to non-existent overnight freezes which grew shorter in duration through the warming trend. Above tree line cornices fell almost everyday, some triggering large Persistent Slab avalanches below and some that didn't. Leeward E-NE aspects in the alpine were the hot spots for these types of avalanches as this is where cornices have grown the largest with prevailing westerly winds this winter. Avalanche size was in the D2 range.

As the warming trend continued and previous winds abated, water was able to move quickly through the snowpack leading to a Wet Slab avalanche cycle. Free water was observed moving into crust/facet combos on the E-NE side of the compass while on the southern half of the compass, large and very weak facets and depth hoar underneath stronger upper snowpack layers were becoming increasingly wet as water moved through the snowpack. While these weak layers had been previously moistened in many locations, they had not seen such rapid infiltration of water. Natural activity has been observed on slopes facing SE-S-W near and below treeline and often initiate with a smaller loose avalanche before propagating and stepping down to deeper layers near the ground. Shallow snowpacks generally less than 150 cm are most suspect as are sunny locations near rocks and cliffs. Avalanches during this time were D2 in size.

Many D1 to D2 Wet Loose avalanches have been observed during this period on aspects around the compass. Intense heating on the southerlies is breaking down any previous crusts quickly while certain northerly aspects which had dry snow are seeing this heating for the first time. Many of these avalanches are remaining mostly in surface snow however some have been able to entrain larger amounts of snow and run several hundred feet in elevation.

Incident, accidents, close calls

On 4/9 a skier was caught and carried in a relatively small wet slab avalanche on the "Diamond Face" of Avery Peak. According to the [observation](#) sent to the CBAC, the avalanche broke above the skier on a steep west facing terrain feature. The skier was able to ski away from the debris to safety. A large slab avalanche seriously injured a snowmobiler in the neighboring Sawatch zone. Here is that [preliminary report](#) from the CAIC.

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

