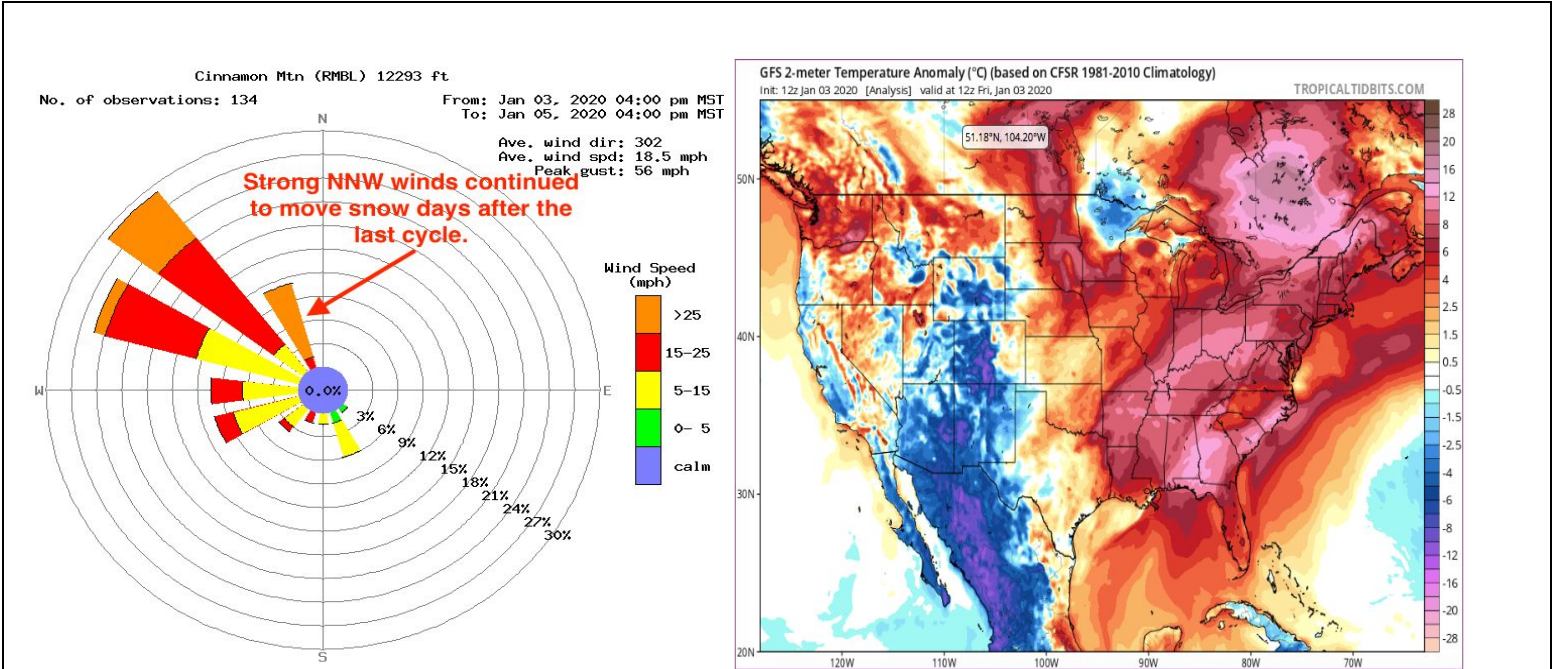


Backcountry Weekly Summary

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

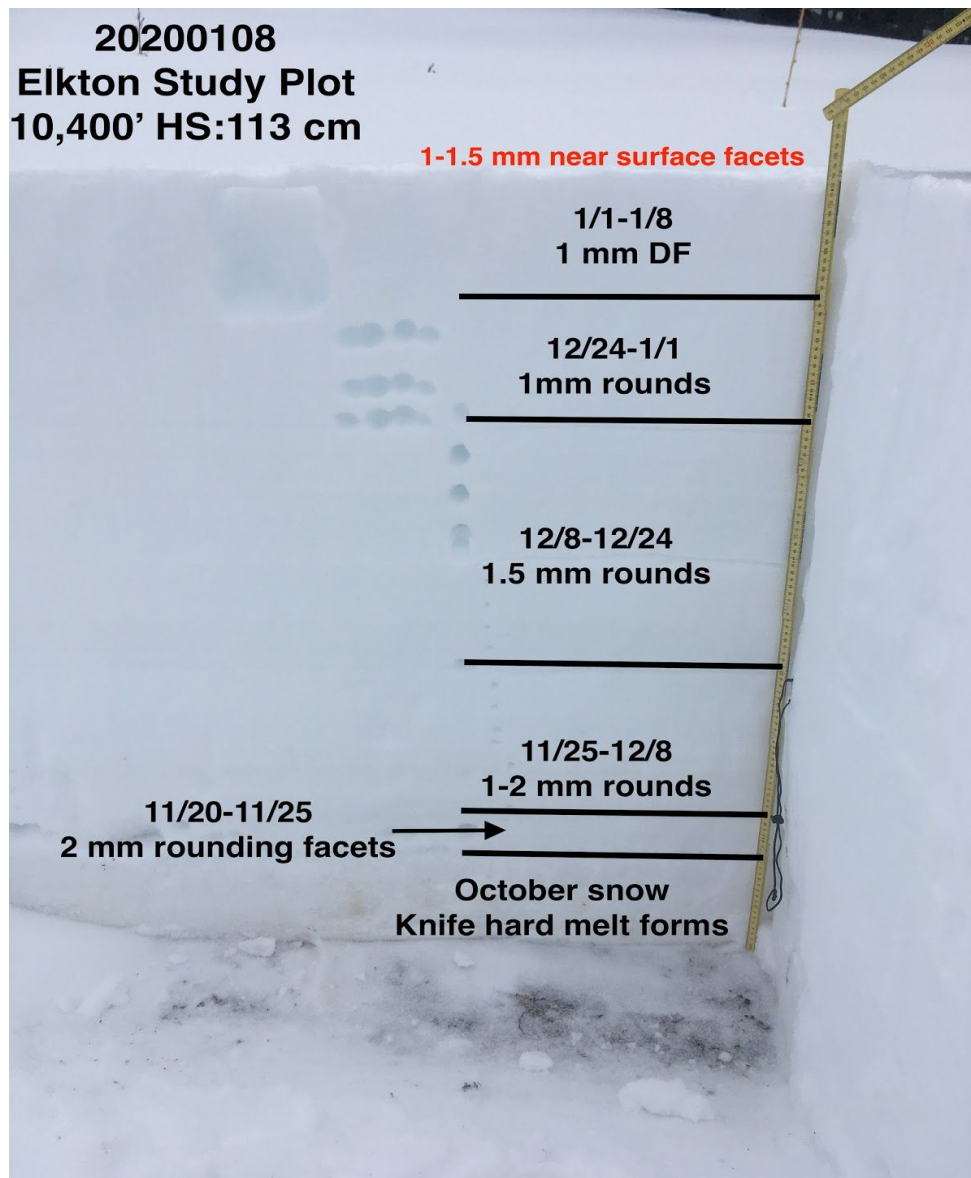
Notable Weather Events (snowfall, SWE, winds, temps, etc.)



Winds were the big story after another incremental loading event at the end of last week. The windrose on the left from Cinnamon Mt shows strong winds from the NW and NNW which were a player in the avalanches this week. The graphic on the right shows temperature departures from normal after the last shortwave moved through.

This period began on 1/3 under strong NNW flow with winds in the 20-30 mph range and gusts to near 60 mph. Cold temperatures were in place under this strong northerly flow with valley lows near -20F and mountain lows near 0F. Low clouds shrouded the highest peaks with light orographics at work and below average temperatures. The warming trend began on 1/4 with sunny skies and winds shifting back to the West. Freezing level was around 11,000'. Similar weather continued on 1/5 under mostly skies. High clouds drifted in by the afternoon keeping freezing level around 10.5K with a bump in west winds.

On 1/6 skies remained clear lower and middle valley while some clouds and very light snowfall shrouded the highest peaks in the Ruby Range with highs in the teens and mid 20s. 1/7 saw bluebird skies, strong solar with all mountain stations staying below freezing. 1/8 was a transition day as the transitory ridge moved East ahead of a quick moving moisture-starved shortwave. Plenty of high clouds streamed in under increasing West flow which prevented more warming however freezing level pushed to ~10,500' with very light snowfall beginning around 20:00. Clouds and light snow continued into 1/9 with very light accumulations of 1-2" and colder temperatures.



Click on image for complete pit profile info including test results and layering id.

****STE results in profile were observed at 97 cm, not 112 cm as the profile shows****

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. This continues to be our layer of most concern as most avalanches are releasing on this layer or stepping down to this layer. 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. At this point it will take loading shallow weak areas that previously lacked a slab or a heavy precipitation event to keep this layer going. This layer is now buried ~100-150 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. PST results are still less than 50cm with propagation to END. This interface is generally ~90-140 cm deep.

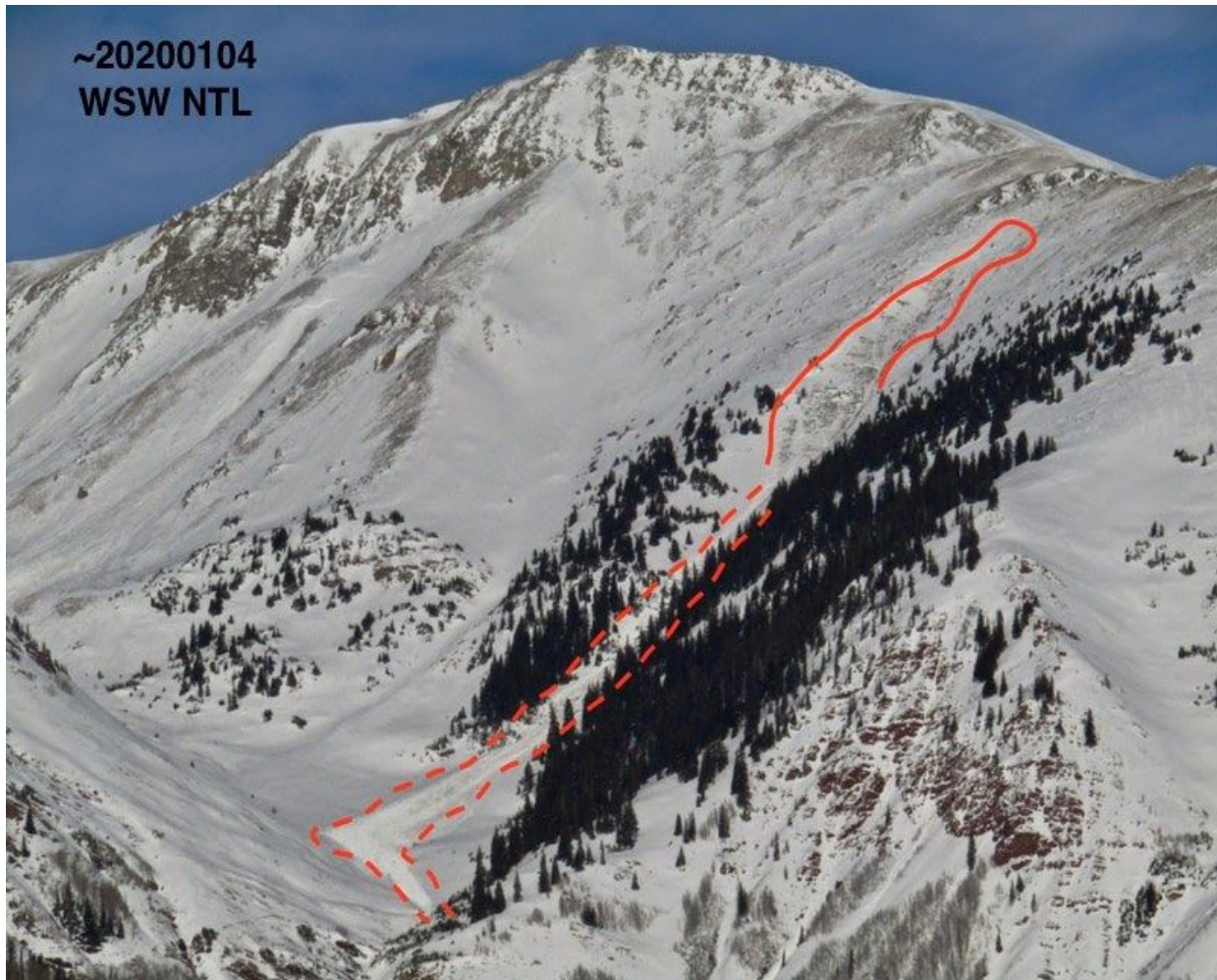
12/24/19 Interface: After a week of sunny and warm weather, crusts formed on south aspects as well as small surface hoar and near surface facets on the shadier aspects. On 12/26 at the Elkton Study Plot, 1 mm near surface facets were observed at this interface with CT9 Q3 results and ECTN10 results. 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. It is now buried ~30-60 cm in the snow favored zones.

1/1/20 Interface: This interface was added this week after near surface facets formed during several days of high pressure at the end of December where Arctic air delivered our coldest temperatures of the year. This layer was then buried by the New Year's storm. Observations [here](#) and [here](#) in the Paradise Divide area highlight this layer. At the Elkton Study Plot, STE results were observed at this interface which was lightly faceted Precipitation Particles.

Avalanches



~20200104
WSW NTL



~20200103
WSW NTL



The beginning of this period saw another incremental loading event delivering ~.4-.7" SWE across the zone. Strong to extreme NW-NNW winds accompanied this storm which re-distributed much of the new snow. During this time cross-loading of inset gully features near tree line on the West side of the compass played a large role in building a slab over a very weak and previously shallow snowpack. There were 3 reported D2-D2.5 avalanches initiating in the new wind drifted snow and stepping down to near ground in this type of terrain. This trend may continue if future loading occurs in terrain with these characteristics.

A variety of smaller wind slabs on leeward and cross-loaded terrain were reported similar to this [Mt Baldy](#) ob. Most of these were all small in size. A few small dry and wet loose avalanches were also observed after new snow and warming temperatures weakened remaining surface snow as seen is this [Poverty Gulch](#) report. Steep shady north aspects below tree line remain weak with the potential for loose dry sloughs picking up momentum similar to this [ob](#).

Incident, accidents, close calls

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

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

Our biggest avalanches this week were on cross-loaded westerly terrain near tree line. This isolated problem developed after extreme NNW winds were able to put a slab on a previously shallow and weak snowpack and may spread in distribution with future loading. Cold temperatures and incremental loading look to be the flavor over the next week which will continue to build our slightly above average snowpack.

