

# Backcountry Weekly Summary

Staff:	Zach Kinler
Week and Year	November 29-December 5, 2019
Backcountry zone:	Crested Butte Area

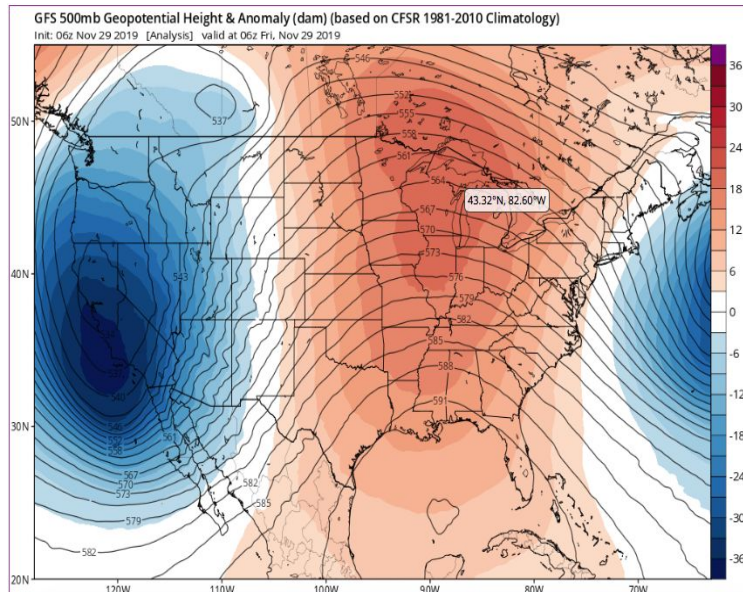
## Notable Weather Events (snowfall, SWE, winds, temps, etc.)

This period began with a Pacific NW closed low pressure system digging into the Great Basin. This system provided a surge of moisture aided by the subtropical jet as well as large-scale forcing and cold air behind the front. Moderate to strong winds with gusts over 70 mph accompanied this storm which initially blew from the South before transitioning to SW-W-NW. Cool, dry air filtered in behind this system and skies cleared on 11/30 with lows dropping below zero and highs in the teens.

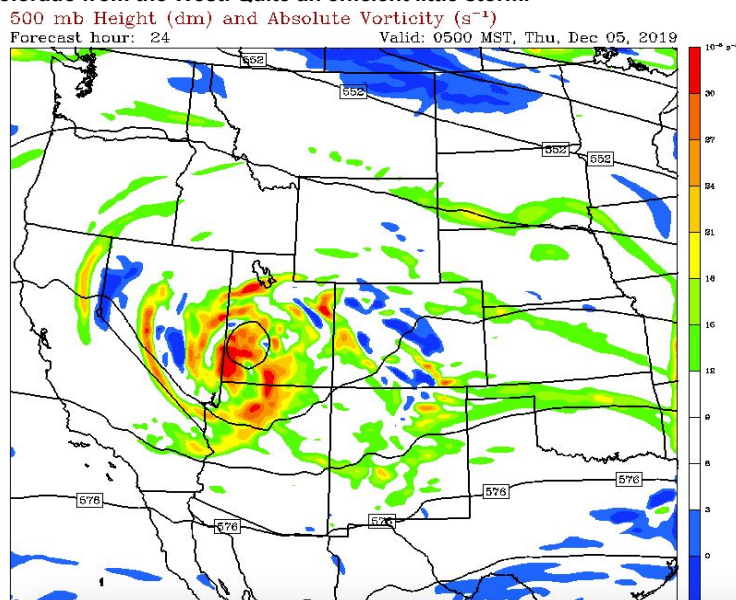
A ridge of high pressure settled on 12/1 with our area under WNW flow. High pressure shifted East on 12/2 with SW flow returning as well as warmer temperatures near the freezing mark. On 12/3 a small disturbance rode up and over the ridge providing a skiff of snow in the early morning hours before clearing skies and very warm temperatures followed under continued WSW flow.

12/4 was a transition day as a closed mid-level low moved onshore into Southern California before tracking west and opening up into a shortwave as it tracked across Colorado. Light south winds with gusts into the 20s initially gave way to moderate to strong westerly winds with gusts up to 40 mph once frontal passage occurred. This was not a particularly organized system however moisture, orographics and cold air came together nicely to produce snow totals on the high end of the forecast during the day on 12/5.

**Height anomalies on 11/29 showing the strong Pacific storm moving onshore and ushering the ridge of high pressure to the East.**



**Height and vorticity on 12/5 showing the mid-level low approaching Colorado from the West. Quite an efficient little storm.**



### Storm Totals 11/29-11/30

Schofield Snotel: 12" snow/1" SWE

Gothic: 7.5" snow/ .61" SWE

CBMR: 9" snow

Butte Snotel: 7" snow/ .5" SWE

Upper Taylor Snotel: 7" snow/ .5" SWE

### Storm Totals 12/5

Paradise Divide: 12" snow

Schofield Snotel: 10" snow/ 1.0" SWE

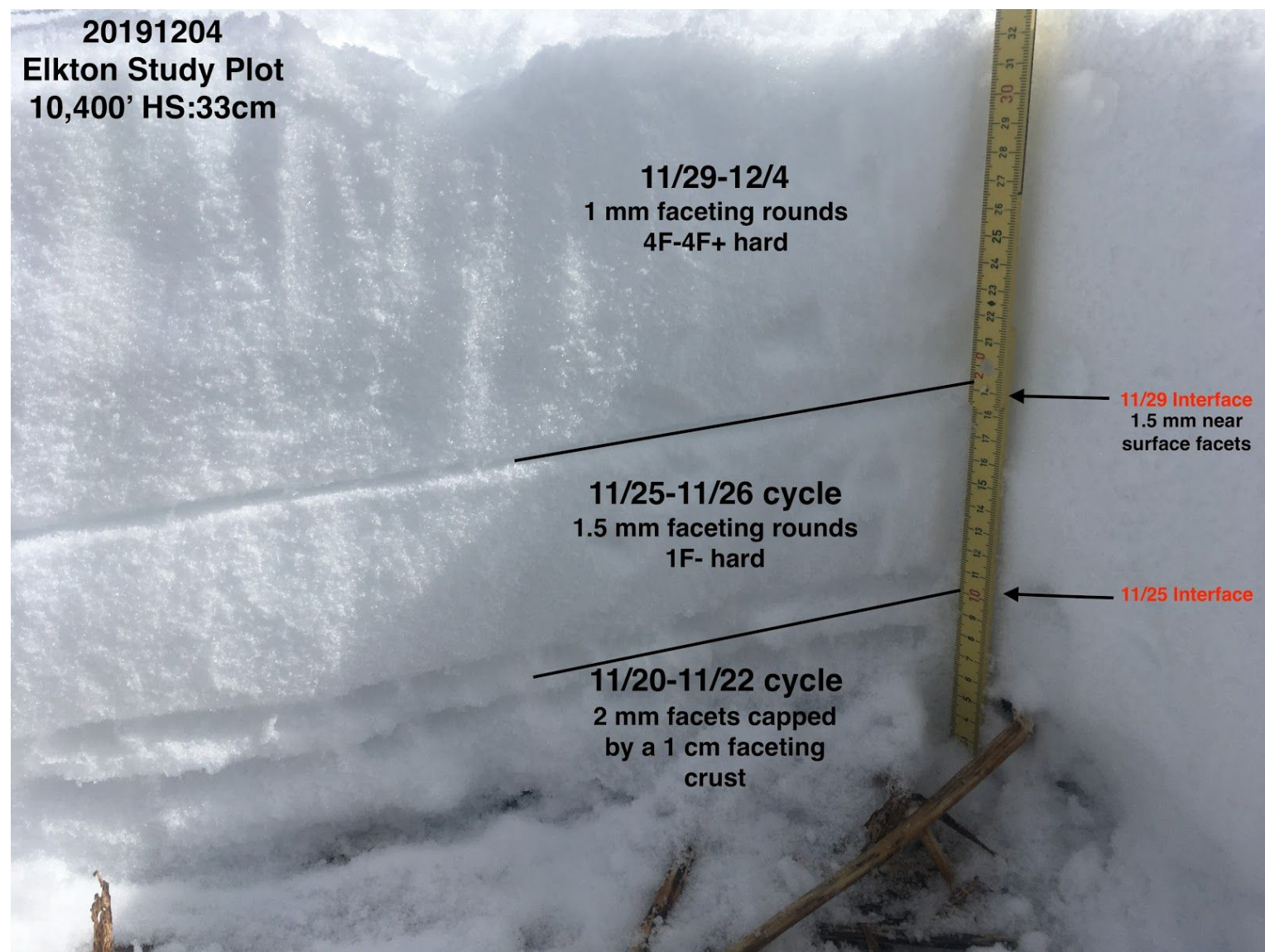
Gothic: 7" snow/ 0.5 SWE

CBMR: 7" snow(estimated from cam)

Butte Snotel: 7" snow/ 0.6" SWE

Upper Taylor: 0.4" SWE

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 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.



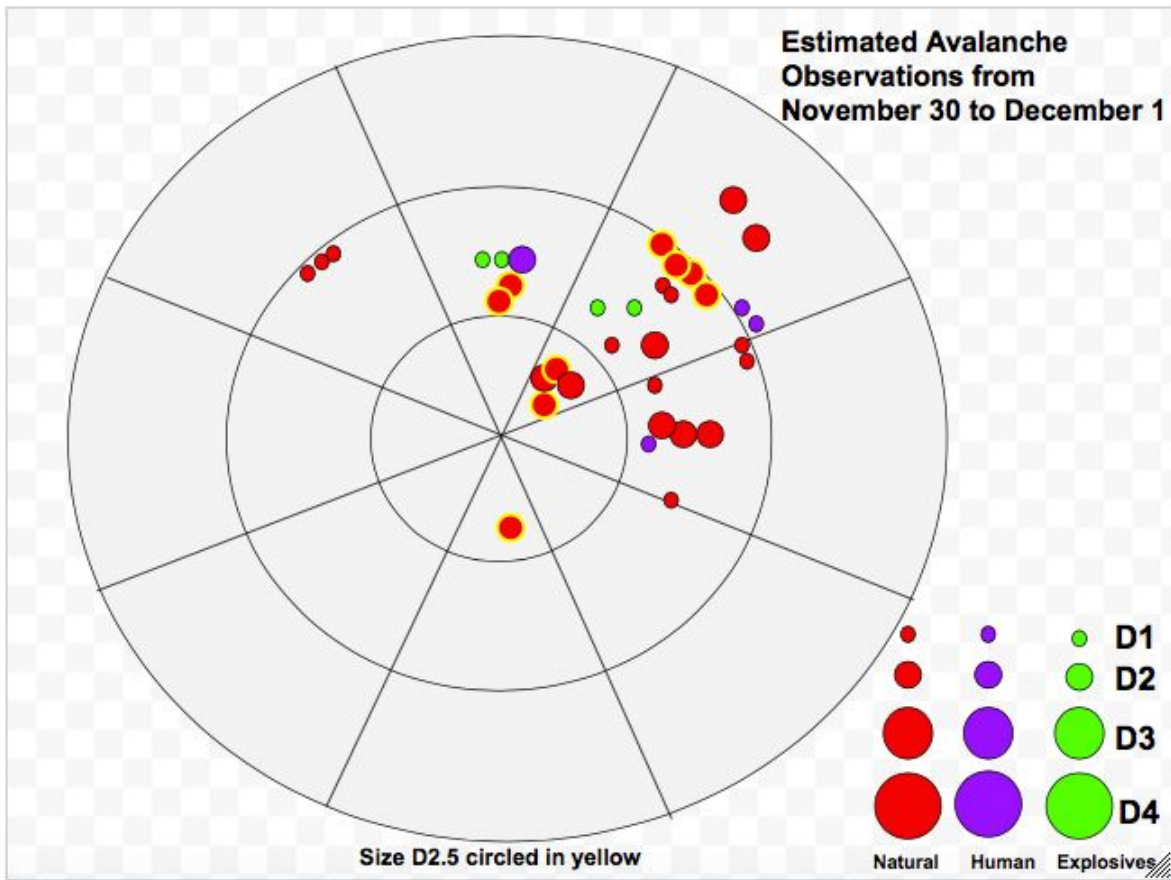
**11/25/19 Interface:** Following the 11/20 cycle, the area saw 2 days of sunny skies and cold clear nights which effectively melted or crusted the recent snow from the southerlies while near surface facets and large grain Surface Hoar were able to form on the northern half of the compass. This weak 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](#) this week, 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.

**11/29/19 Interface:** At the Elkton Plot site this week, 1.5 mm near surface facets were observed at this interface with moderate CT and shovel tilt test results. This layer appears to have more strength than the 11/20 and 11/25 but will need to be monitored for future activity.

**12/5/19 Interface:** High pressure with cold nights and warm days during the first few days of December weakened the snow surface with surface hoar and near surface facets forming. This layer is now buried under a new soft slab ~20-30 cm deep. This [Pittsburgh Ob](#) highlights this layer found in a shovel tilt test. While not buried deep just yet, this layer will need to be monitored.

### Avalanches

Following the storm on 11/29-11/30 we saw our first widespread avalanche cycle, with most slides releasing near the ground on the 11/20 Interface. This [CBAC ob](#) highlights many of the avalanches that occurred. Avalanches during this cycle were D1-D2.5 in size with most of the activity occurring on slopes facing N-E near and above treeline. This is where the distribution of October snow was the greatest. Outside of the snow favored zones North and West of town, only isolated D1 avalanches occurred during this cycle. Below is a graphical estimation of this avalanche cycle.





Large, widely propagating avalanches followed the 11/29-11/30 cycle with areas North and West of town in the bullseye.



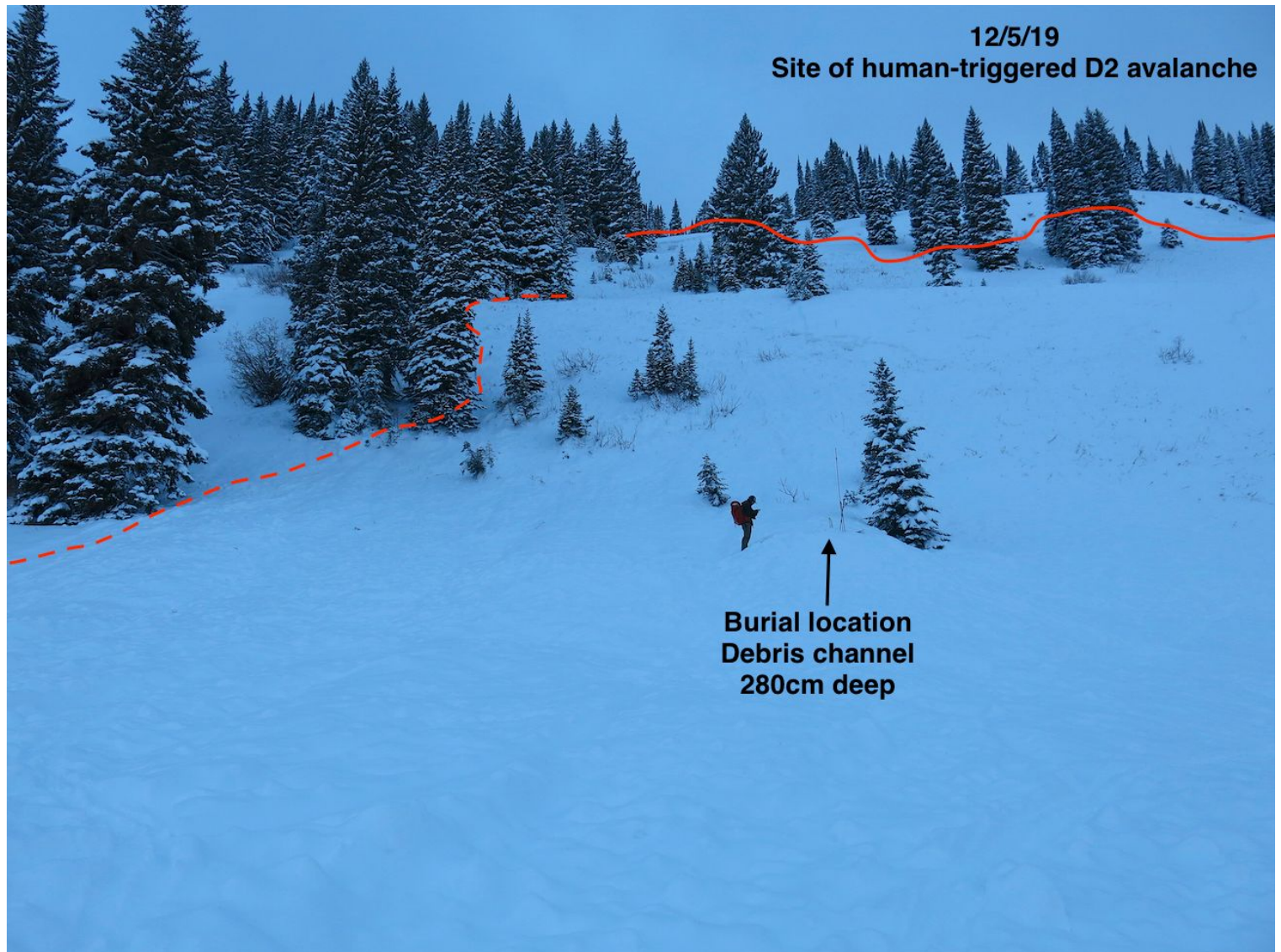






## Incident, accidents, close calls

On 12/5 a snowboarder triggered a large D2 avalanche which broke on old snow near the ground and led to a partial burial. The rider never lost his airway and was assisted by his partner. A [Preliminary report](#) can be seen here. This was a large avalanche that broke ~100 ft wide and ran ~400 vertical feet carrying the victim with it in the main debris channel which stacked up to 280 cm at its deepest. This main channel was also where the victim was partially buried. We at the CBAC are grateful there were no injuries and will take this opportunity to learn while moving forward.



Since November 25th, there have been 8 people caught in avalanches and 7 partially buried. There have been almost 200 recorded avalanches with numerous human triggers. Early season snowfall lurks in the areas with the best coverage and riding conditions however this is where we have our first major Persistent slab problem.

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

This period saw its largest loading event, first major avalanche cycle and lots of human-triggered and natural avalanches. As snow coverage continues to grow and offer better recreating, folks are stepping out into more and more terrain. With an early season persistent slab avalanche problem, we will continue to see the potential to trigger large avalanches on the northern half of the compass. These layers will be further stressed by additional snowfall. Southerly slopes with no early season snow or firm melt forms are providing great skiing and riding however. Below is the 6-10 day outlook for the coming week showing above average temps and moisture moving onshore towards Colorado.

