

Backcountry Weekly Summary



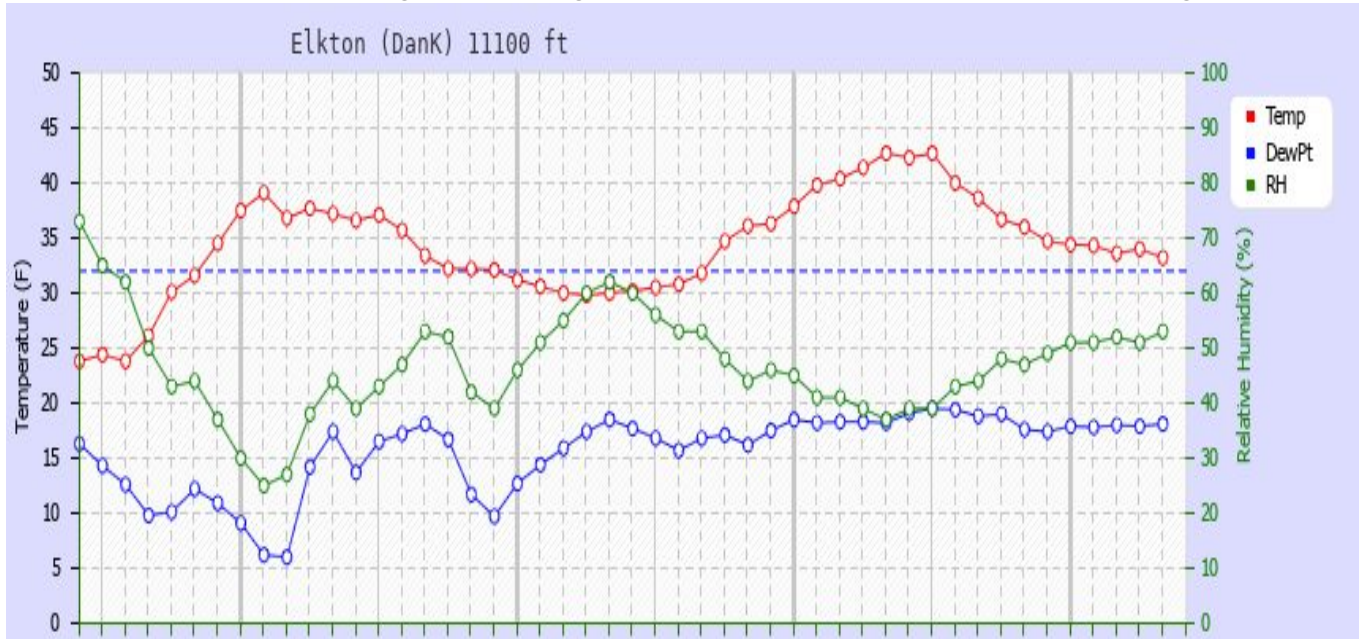
Intern:	Zach Kinler
Week and Year	April 5-11, 2019
Backcountry zone:	Crested Butte Area

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

This period began with seasonal temperatures and sunny skies on 4/5 as flow transitioned to SW in front of a weakening Pacific storm. Clouds increased on 4/6 and isolated convective showers produced a couple inches of snow across the area. Dry air and seasonal temperatures returned on 4/7-4/8 ahead of the next Pacific storm system which was dropping down from the NW into the Great Basin. Strong SW flow led to continued windy and warm conditions on 4/9. During this 3 day stretch of warm weather, we saw temperatures rise above average leading to some of the warmest weather of the winter with weak to non-existent overnight freezes.

On 4/10-4/11 our area was under the influence of an energetic shortwave trough that closed off as it was approaching Colorado and provided a direct hit on Central Colorado. While the core of the low was directly overhead, we saw isolated convective type precipitation starting briefly as rain below ~10,000' transitioning to all snow. The most productive snowfall came on the backside of this expanding low with W-NW winds working on residual moisture. Snow totals were 5"-15" with the Kebler Pass area seeing the deepest amounts. Winds were moderate to strong during this storm blowing initially from the SW before migrating W and then NW.

Temp profile from 11,100 ft showing above freezing temperatures for an extended period with no overnight freeze on 4/9.



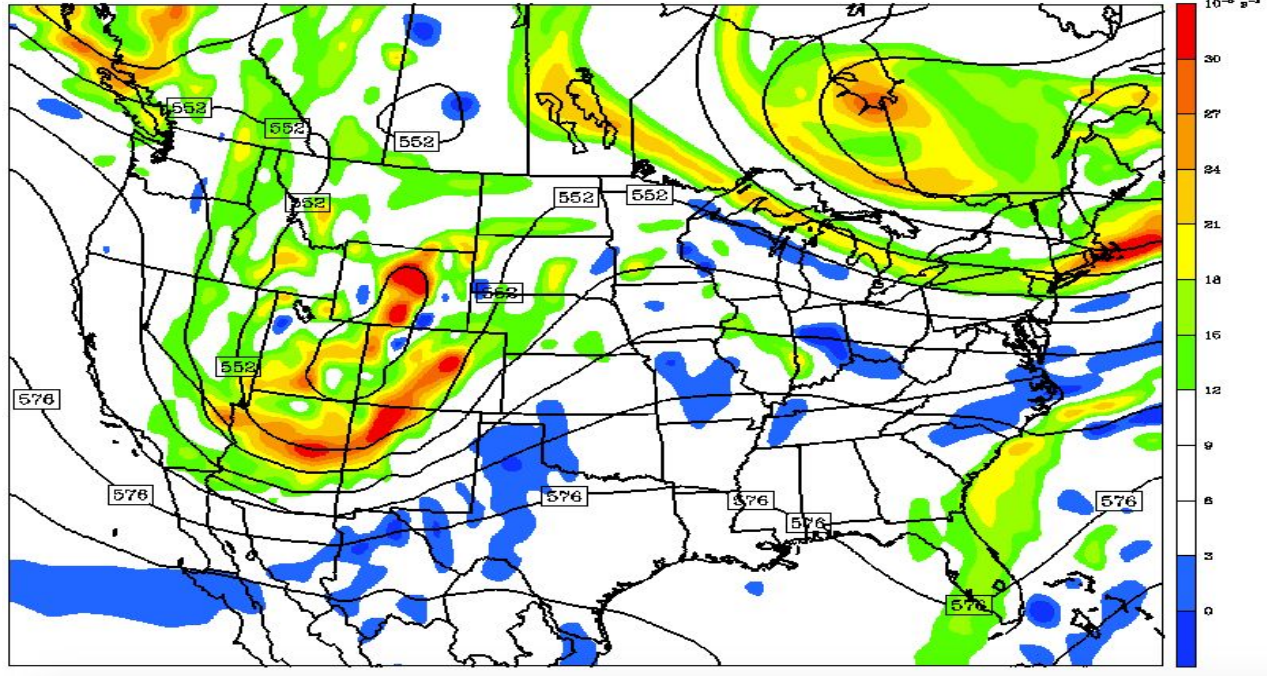
500 mb pressure with the latest Pacific storm bearing down on Colorado. This energetic shortwave formed a deepening closed low as it passed over Colorado and roared into the Midwest.

NCEP GFS

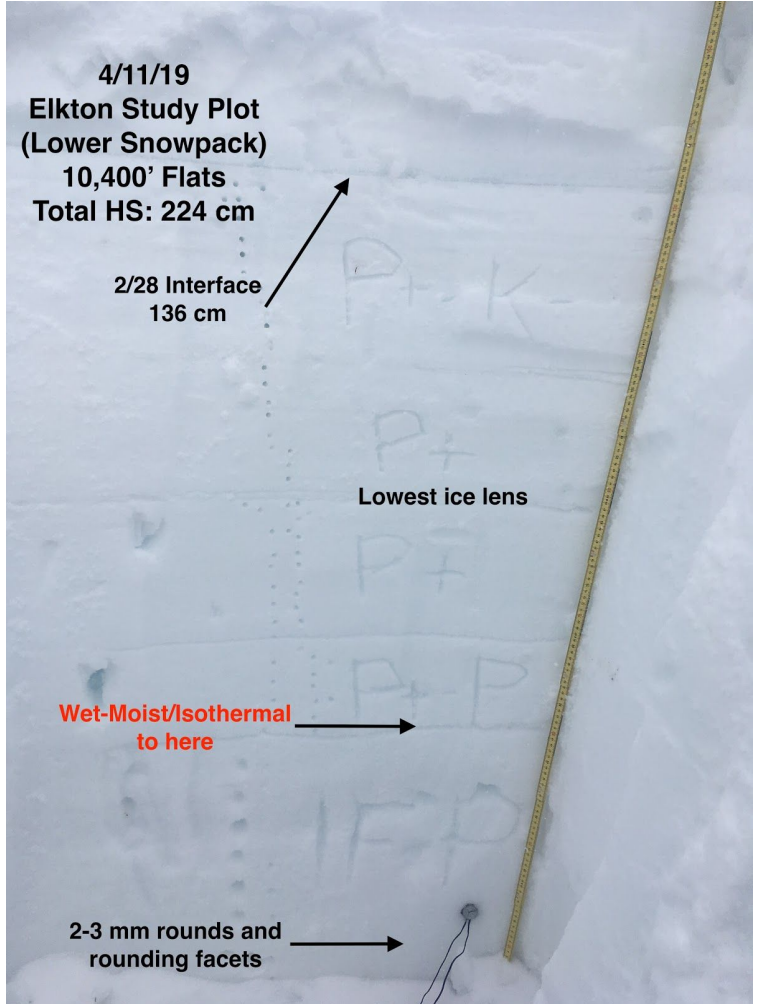
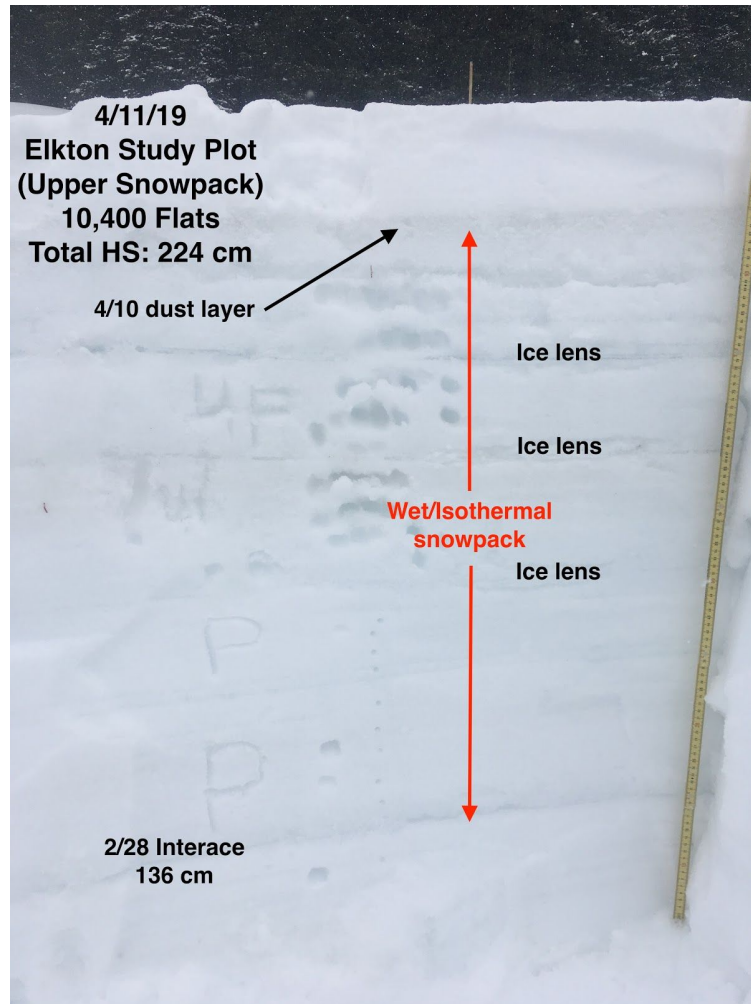
500 mb Height (dm) and Absolute Vorticity (s^{-1})

Forecast hour: 15

Valid: 0900 MDT, Wed, Apr 10, 2019



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



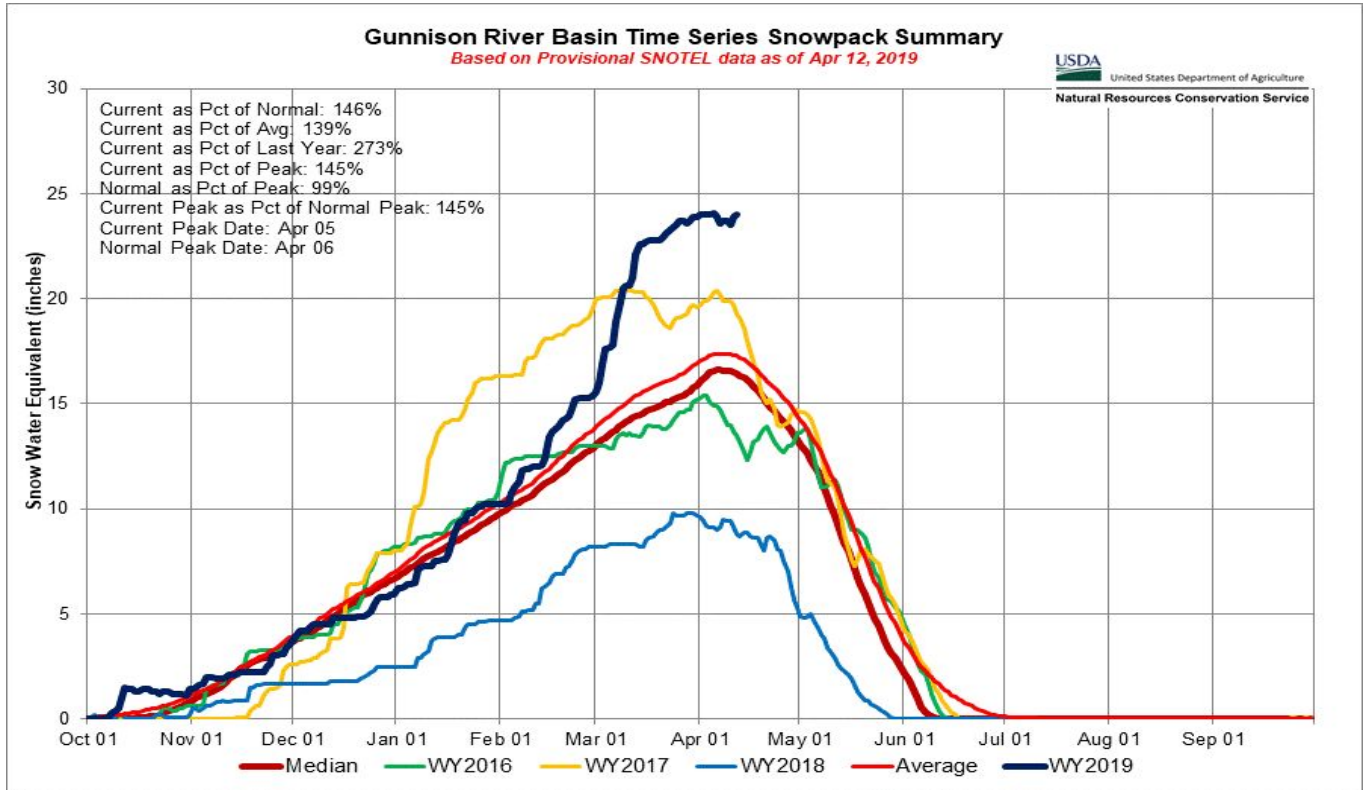
12/19/2018 Interface: This layer from our mid-December dry spell was unreactive in small and long column tests this week at the study plot. When originally buried, we were dealing with a variety of crust/facet combos on the southerlies with shady aspects having surface hoar down low and near surface facets as you get near and above treeline as seen here: [se-s-sw-ntl](#) and [afternoon-lap-skook](#). After the X-mas storm and with SWE amounts on this layer exceeding 1", several D2 avalanches were observed here ([p-divide-shaded-treeline-structure](#) and [north-below-treeline](#)). After the "Holiday Slabs" came in, we again saw many a small avalanche likely releasing on this layer, especially in the Cement Creek zone. During the avalanche cycle from 1/16-1/24, several very large avalanches on [White Mountain](#) and [Whetstone](#) likely broke on this layer in the shallower zones near Crested Butte. This interface is still visible in snow pits with varying results in short and long column tests. This [Crested Butte area](#) observation revealed a significant slab over this layer with propagating results in a long column test. While less of an issue in our deeper snowpack areas, this interface is still a player, especially in our shallow zones around town and to the East. A couple recent very large avalanches breaking deeply in the snowpack and many step-down avalanches have been failing around this layer. This [recent natural activity](#) highlights a couple slides breaking very close to the ground and this [very large Gothic West side avalanche](#) breaking at the ground may involve this interface. No test results and no activity on this layer continue as it becomes less of a concern however free water could wake it up.

01/15/2019 Interface: This layer formed after the minor accumulations around 1/10-1/12 fell on the weak surface from after 1/06 and was observed as 6 mm SH on a SE aspect @ 11,500, and 3-4 mm SH at the Elkton Study Plot @ 10,400'. Take a look at this observation, [surface-obs](#), from the Paradise Divide area which documents this interface as well. This [skier triggered](#) avalanche on a S aspect in the Kebler Pass area ran on this layer, which was a crust, as did [this](#) avalanche. Last week in the Crested Butte zone, this layer was observed as SH on top of a crust/facet combo on a SW aspect near treeline and produced propagating results. This interface was involved in a skier triggered avalanche on the South face of Baldy(see "Incidents, accidents and close calls" below). This [Kebler Pass zone](#) observation reveals this layer of concern in our deeper zones as does this with [Propagating results](#). [Explosives testing](#) got results on this layer last week and future loading will certainly stress this interface. This [CBAC observation](#) reveals this layer to be healing in a deeper snowpack as do tests in the Elkton Study plot, however in shallower zones less than 200 cm, it likely has not healed as efficiently and may still be a culprit as many recent avalanches are stepping down deeply such as this recent very large [Gothic](#) avalanche. No test results and no activity on this layer continue as it becomes less of a concern however free water could wake it up.

1/21/2019 Interface: Warm days with highs above freezing and cold nights under brief High Pressure following our 1/15-1/18 cycle led to the formation of surface hoar, near-surface facets and crusts depending on aspect/elevation which got buried initially by our "MLK" storm and now sits ~60-80cm deep after the most recent loading. This layer was the culprit in this [Elk Creek skier triggered](#) avalanche. This [large remote-triggered](#) avalanche occurred a few days later with this interface likely involved. In late February, there were no results on this layer at the Elkton Study Plot and this [CBAC observation](#) reveals this layer to be healing in deeper snowpacks but still a potential offender in the shallower snowpacks less than 200 cm. Again, recent natural avalanches breaking deeper into the snowpack may be stepping down and through this layer. No test results and no activity on this layer continue as it becomes less of a concern however free water could wake it up.

02/03/2019 Interface: This is our most recent layer of concern and is fairly widespread layer of small near surface facets on shadier aspects and crust/facet combos on sunnier aspects. This layer formed during a period of stable weather with sunny skies, cold nights and warm days after last week's storm cycle and got buried in the first hours of 2/03 by a storm which came in with widespread graupel making it easy to identify in pit walls. This interface was immediately reactive in pit tests as seen in this [Paradise Divide](#) observation. On a South aspect, this layer produced propagating results before the Valentine's loading as seen [here](#). Prior to our "March Madness" event which has buried this layer under 185 cm of P hard slab at the Elkton Study Plot, facets were observed on 2-3 mm graupel particles. No test results were seen however prying of the slab produced planar fractures. Because of the current depth and trend, this layer is not concerning at this point. It could cause problems if free water can weaken it.

2/28/2019 Interface: The warmest temperatures of the season led to a widespread melt-freeze crust which got buried on 2/28. No faceting was seen yet at the Elkton Study Plot last week, however temperature gradients were very strong under this crust. During our historic “March Madness” loading event, many avalanches broke initially at this new/old interface however it is now under 4-6 ft of dense slab and while it is a smooth sliding surface, it does not appear that this will be a layer of concern moving forward. Recent tests such as this [Paradise Divide](#) ob documents this well. Small rounding facets were observed above this crust with prying of the long and short column tests producing planer fracture here but it most likely would take a huge load to wake this layer up.



Avalanches



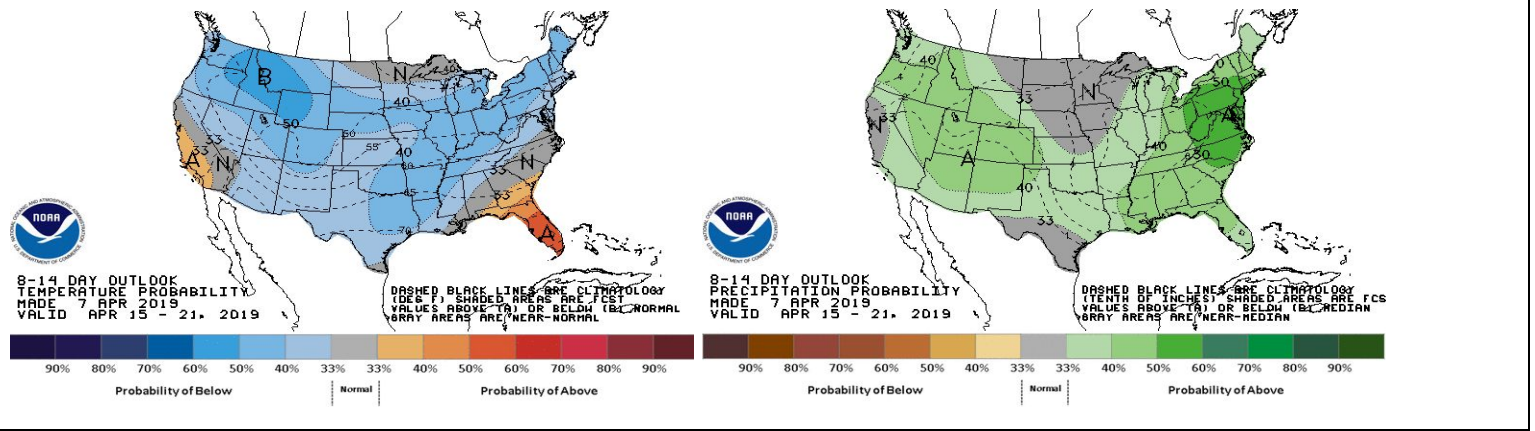
**4/7/19
Wet Loose avalanches
East BTL**



Avalanche activity this week was largely of the wet variety with some of the warmest temperatures of the season. There were many loose wet avalanches on aspects E-S-W at all elevations during this time. Most of these remained small (D1 in size). Glide cracks were observed on sunny aspects with shallow snowpack below treeline. A large wet slab avalanche ran on an East aspect of Gibson ridge on a path that had avalanched previously this winter. This was another isolated wet slab with no similar type avalanches around the area. After colder weather and snowfall arrived on 4/10, we saw shallow storm and wind slab instabilities develop with new snow falling on slick crusts.

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

In typical spring fashion, we have see a roller coaster weather ride and will continue to see unsettled conditions mixed with strong April sun. The 8-14 day outlooks below show below average temperatures and above average precip for the upcoming week. The snowpack continues to transition during this time with wet slab activity still possible when we finally see warming again.



Incident, accidents, close calls

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