Backcountry Weekly Summary

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Week and Year	1/30/21-2/5/21
Backcountry zone:	Crested Butte Area

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

This period's weather can be summarized by a quick low pressure trough over the weekend (1/29-1/30) followed by dry, unseasonably warm conditions Sunday (1/31) through Tuesday (2/2), followed by a large loading event Wednesday afternoon (2/3) into Thursday morning (2/4).

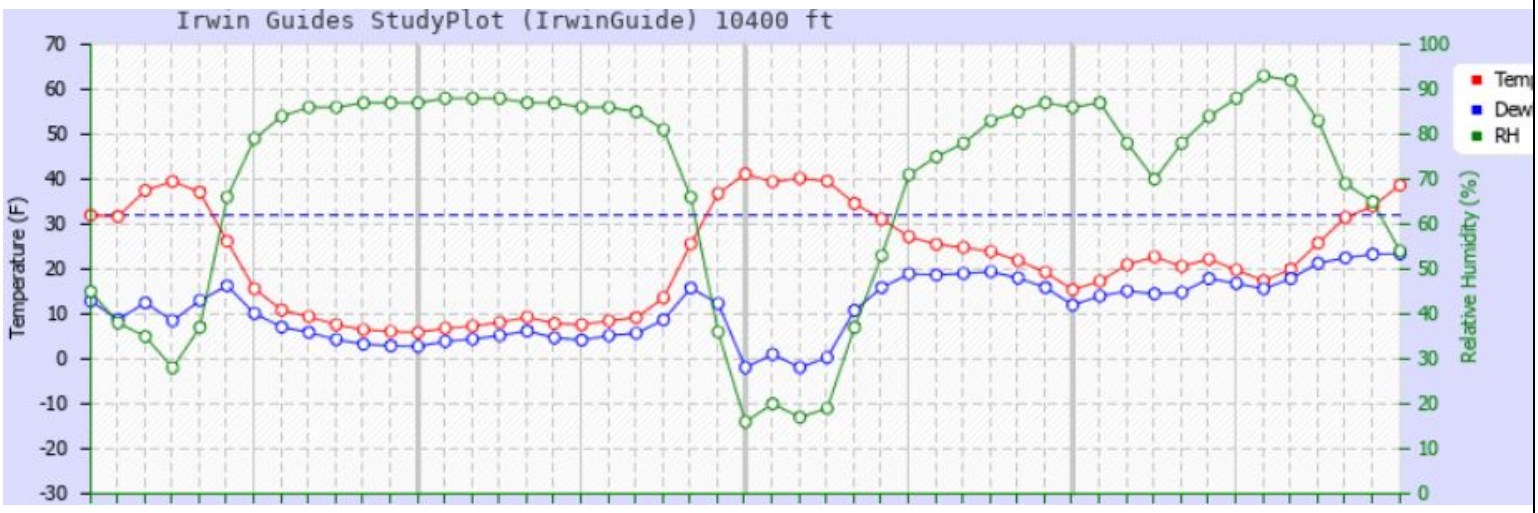
The initial storm on Friday (1/29) produced a fairly light refresh under SW flow. As of 4 am Saturday (1/30) morning totals reached 5" at Schofield pass, 4" at Elkton, 3" at Irwin, and 2" at CBMR. As the day went on, winds shifted from SW to W and finally to NW around noon, and then the magic happened. Northwesterly orographic showers favored the NW mountains in an incredible way. NW flows can really produce surprising numbers! See storm totals below.

Storm Totals from 1/29-1/30

CBMR: 2"
Irwin: 20"
Marble 18"
Butte: 3"
Upper Taylor: 3" and .1 SWE

As the (1/29-1/30) trough exited our forecast area, a strong high-pressure ridge built over Colorado bringing dry and unseasonably warm temperatures from 1/31-2/2. These unseasonably warm temperatures caused a large natural avalanche cycle due to solar warming in the NW mountains. Temperatures at 11,000 ft in Elkton reached 41 degrees Fahrenheit on Monday afternoon (2/1). In town, overnight temps hovered around 5 degrees, while daytime highs reached 38 degrees.

This shows a study plot near Irwin. Notice how the temperature climbs above freezing 3 days in a row, and even reaches 40 degrees on 1/31



Warm temperatures continued into Wednesday morning (2/3) as the high-pressure ridge broke down and a low-pressure trough made its way into the zone from the southwest. After noon on Wednesday (2/3) precipitation intensity increased as temperatures decreased, and snow continued through the night. Thursday (2/4) morning, the skies cleared as we welcomed a bluebird powder day.

Storm Totals from (2/3) storm:

Butte Snotel Station: 10", .9" SWE
Irwin Guides Study Plot: 12"
Schofield Pass: 12", 1.5" SWE
CBMR: 11"

Wind direction quickly flipped from SW to NW and the Northern Colorado mountains took most of the moisture from us. We will remain in an unsettled northwesterly flow through the weekend.

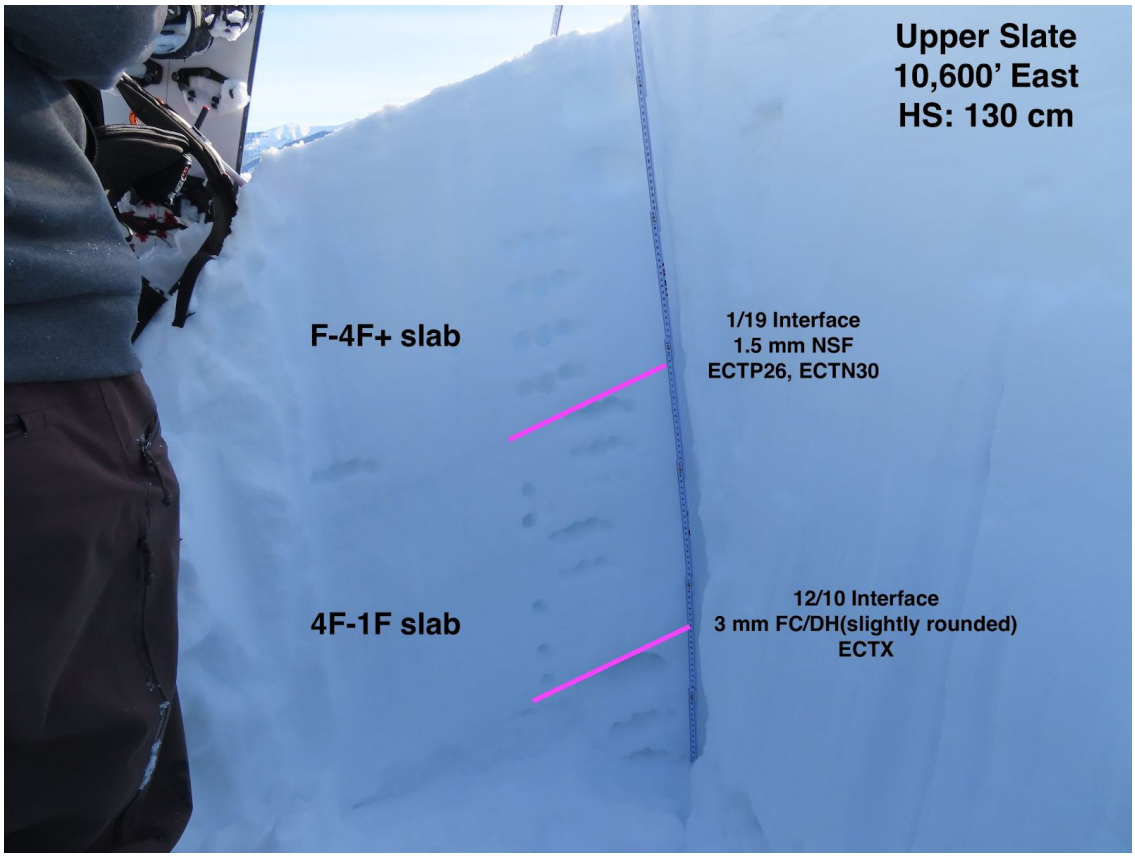
Snowpack (weak layer date(s) and status, structure, stability trends)

Interfaces

1/19 Interface

A long dry period in early January combined with strong inverted temperatures continued to weaken our snowpack in both regions of our forecast areas. As all aspects experienced continued faceting, winds stripped snow off alpine terrain facing west and north. On sunny South, South-East, and East facing slopes, thin melt-freeze crusts formed resting on top of weak facets down to the ground. This interface has reached its tipping point due to recent loading events and we are seeing numerous persistent slab avalanches fail on this PWL. The 1/19 interface is our primary concern at the moment and will be for weeks to come.

Here is an example of a snowpit in the NW Mountains showcasing slabs sitting on top of both of our nasty PWL's



12/10 Interface

The Crested Butte area, along with most of Colorado, suffered through high pressure from 11/23 through 12/9. During this dry period, all areas where snow didn't melt away aggressively faceted. On shadier aspects, this interface consists of 1-2 feet depth hoar. On aspects with more solar radiation, these facets are associated with melt-freeze crusts. On 12/10, new snow buried this assortment of persistent weak layers ushering us into a season-long persistent slab problem. This interface has caused widespread avalanche activity over the past month and a half, such as this helicopter evacuation and this fatality. This interface is now buried very deep in our snowpack. We have not seen as much recent avalanche activity on this interface compared to other interfaces higher in the snowpack.

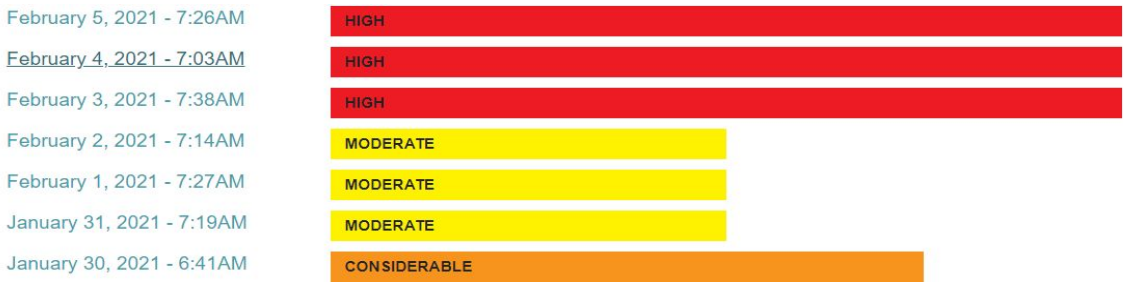
NW Mountains

With two rapid loading events in this period (1/30 and 2/3), our weak snowpack was pushed to its tipping point… Again. After the first storm on 1/30, where favored areas of the NW mountains received up to 20" of new snow, the skies turned blue and a heatwave came through town. This warm front caused the recent precipitation slab to settle very quickly, which then spawned a large natural avalanche cycle on 1/31 seen here in Irwin and here near Schofield Pass. All of these persistent slab avalanches failed on the 1/19 interface.

During our short n' sweet dry/ warm period from 1/31-2/2, nighttime temperatures stayed warm enough to prevent widespread near-surface faceting on shady aspects, as crusts developed on sunny aspects. Wednesday (2/3) night's storm dropped about a foot of snow and an inch of water many areas around CB. Unlike Saturday's (1/30) storm, which favored only the NW mountains, this storm shared the love to all areas in our forecast zone. This storm coincided with a large natural avalanche event in both the NW and SE mountains, along with many other human triggered avalanches. Take a look at observations here and here to see natural and remotely triggered avalanches from 2/4. Below shows the danger rating climbing to HIGH (4/5) coinciding with the increased precipitation on 2/3.

Danger ratings for the NW Mtns during this period

Danger Rating for SE Mtns



SE Mountains

The SE mtns only received an angry inch or two during the 1/30 storm, so the avalanche danger stayed at MODERATE (2/5) for the next 3 days. The SE mountains had a shallower, weaker snowpack than the NW mountains prior to the 2/3 storm and as expected, the 2/3 storm produced a large natural avalanche cycle early on 2/4.

The 2/4 avalanche cycle produced natural avalanches **mostly** in near or below treeline terrain features. The alpine snowpack is stronger due to previous winds stiffening up slabs. The alpine has not reached its tipping point yet, but when it does, avalanches will be larger and more destructive. Avalanche danger remains HIGH (4/5) above treeline.

Avalanches

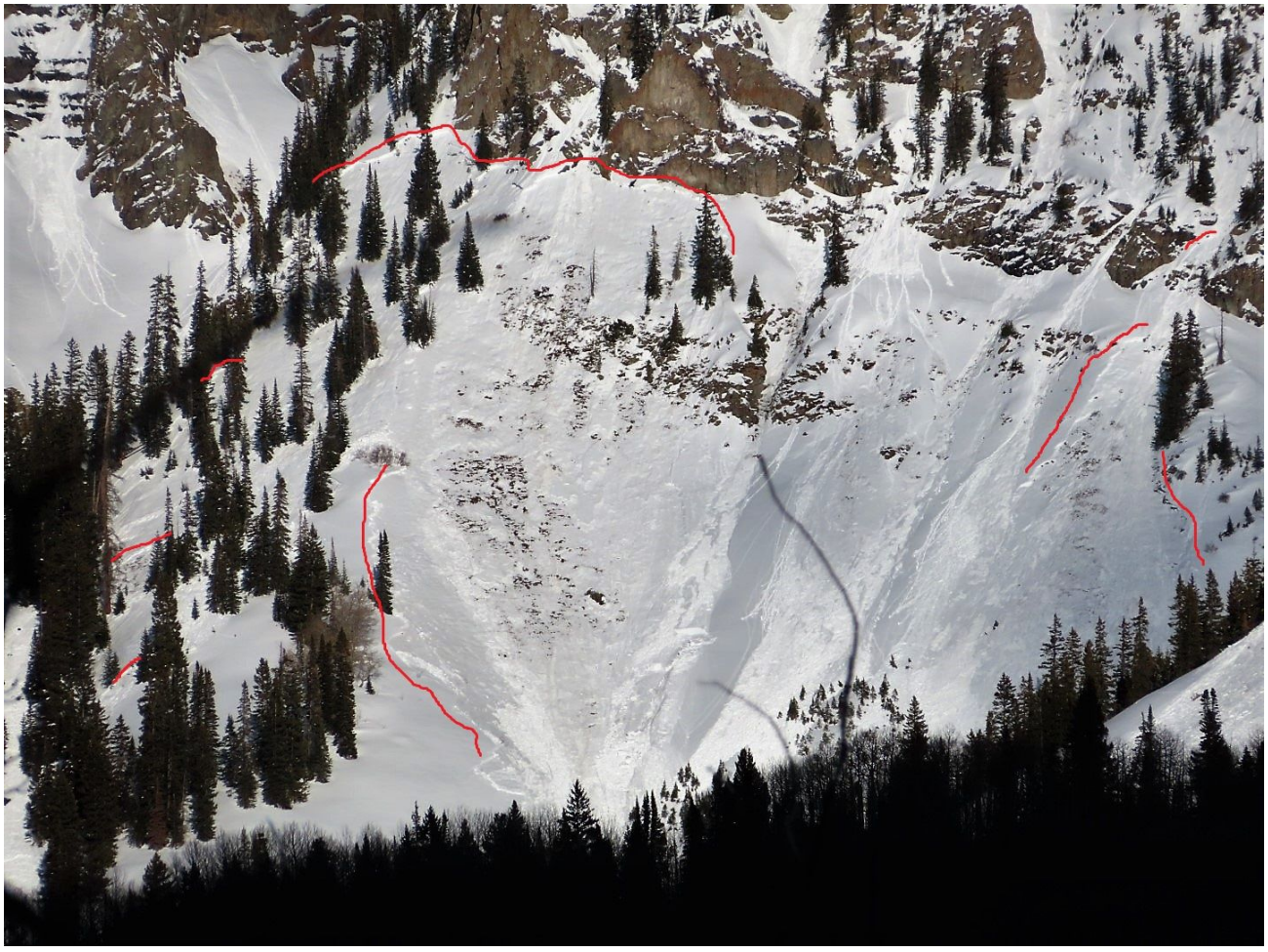
Well enough talking about all these avalanches. Here are some pictures. Let's start with the persistent slab avalanche cycle due to rapidly warming temperatures the day following the 1/30 storm.

Large Natural avalanche cycle on Southerly aspects of Mt. Belleview on 1/31
Natural loose avalanches sympathetically triggered 6 large slab avalanches from 11:00 am to 2:30 pm

Large persistent slab avalanche in Robinson Basin on SE aspect due to warming (1/31)

S Facing Avalanche above Democrat Basin which failed on 1/31

A cluster of D1s and D2s below Ruby Peak failing on 1/31



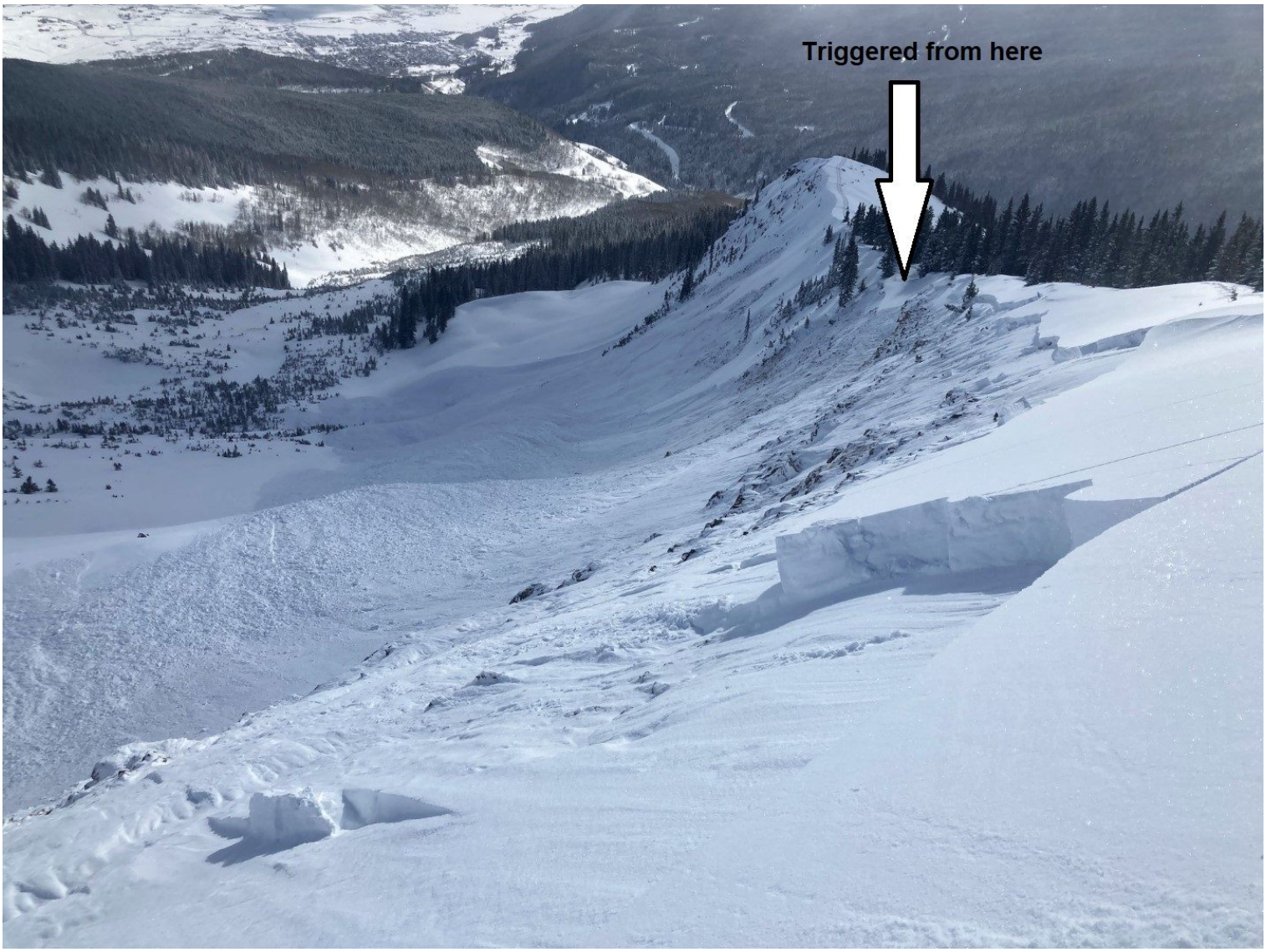
Well, those sure were some sweet slides, but wait, there's more! Let's take a look at the avalanche cycle of 2/4!

Widely propagating natural persistent slab in Elk Creek (R4D2.5) (2nd ridge)

Natural D2 on East facing slope above Peanut Lake Road

Incident, accidents, close calls

On 2/4, 5 skiers descended Red Lady Bowl, after they were clear of avalanche terrain, a skier, from ridgeline, remotely triggered a large persistent slab avalanche on the ENE facing sub ridge of the bowl. SS-AFr-R2-D2.5-O. The avalanche propagated 1800 feet wide and the crown averaged 3-4 feet deep. No one was caught or involved in the slide but this serves as a reminder of the potential of remote triggering large avalanches from below or adjacent terrain.



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

A large amount of natural and human triggered avalanches this week is a sign that we are dealing with an extremely dangerous snowpack both locally and throughout the state of Colorado. There were a total of 4 avalanche fatalities throughout Colorado this past week. One in Vail, and the other near Silverton. This weekend will present us with very dangerous and challenging conditions. It is best to avoid traveling in or underneath avalanche terrain this weekend. Take the time to make a solid route plan with your partners before venturing out into the backcountry. Have fun, be safe, and enjoy some low angle pow skiing!