Backcountry Weekly Summary

Staff: Zach Kinler
Week and Year: December 13th-19th, 2019
Backcountry zone: Crested Butte Area

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

GOES-West water vapor imagery showing an impressive river of moisture originating around Hawaii and ending in Colorado.

Vapor transport forecasts for the 12/12-12/15 AR event showing trajectory and strength of our first major river event of the season.
This period began with a multiple day cycle providing an extended period of light-moderate snowfall with embedded heavier showers. On 12/13 a 180 knot jet stream was efficiently transporting moisture in NW flow into our area. This moisture had origins in the Pacific near Hawaii marking our first Atmospheric River event of the season. With the strong jet stream came very strong winds with ridgeline speeds in the 40s and gusting into the 60s. Accumulations came overnight before a break in the action with snowfall beginning again around 20:00.

On 12/14, moderate snow fell through the night with the jet stream and moisture tap still in place. As the jet and the associated cold front pushed south, flow shifted to the WSW as the second wave of moisture and dynamics moved through. Again, moderate snow with heavier showers and strong winds in the 20s gusting into the 40s followed. This moisture rich Pacific air led to a warming trend starting around midnight before the front moved through. The jet stream finally shifted south of our area with snow winding down and winds began to decrease around 18:00.

On 12/15, colder air filtered in with the mountain locations hanging in the single digits under broken skies and light NW breeze. Initially, visibility was good with a ceiling well above 14,000 ft however as the upper level trough responsible for the recent weather finally approached, clouds filled back in and the ceiling dropped to valley floors however no additional accumulations occurred.

**Storm Totals 12/12-12/15**

Schofield: 21” snow/ 2.5” SWE  
Gothic: 20.5” snow/ 1.63” SWE  
CBMR: ~15” snow(cam)  
Butte: 12” snow/ 1.4” SWE  
UT: 17” snow/ 1.3” SWE  
Town of CB: ~12” snow(ob)

Following the storm on 12/16, skies were clear with a light North breeze. The recent cold air was well mixed with mountain locations in the negative single digits while the valleys remained above 0°F in the single digits. On 12/17-12/19 a strong ridge of High pressure set up over the Great Basin leaving our area in cold NW flow. Clear skies and calm winds allowed valley temperatures to plummet into the -20s overnight while mountain locations above 12,000 ft remained in the +20s. This strong inversion remained in place during the daytime hours as cold air was anchored in place in the valley floors.

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

A widespread natural avalanche cycle followed our first Atmospheric River event this week after 1.5”-2.5” of SWE fell accompanied by strong to extreme Westerly winds. This overloaded multiple weak layers throughout the snowpack including surface hoar and crust/facet combos from early December. On aspects from NW-N-E where these mid-pack weak layers overlay October snow(now Depth Hoar), avalanches were breaking at the ground regardless of where they initiated. This put the bullseye again on the wind drifted shady half of the compass where we saw many large D2-D2.5 avalanches. Sheltered slopes below treeline got in on the action as well as these areas held the weakest early season facets and Depth Hoar. Crust/facet combos formed on the southerlies in early December. These interfaces were finally overloaded by the recent cycle which led to our first major avalanche cycle on S and SE aspects near and above treeline. It appears the crusts were able to support a large load before failing.
which created some of the largest avalanches of this cycle with several D2.5 size avalanches and our first reported D3 on a South aspect near Gothic. With a long duration loading event, the extent of the avalanche cycle is sometimes hidden, however as more obs come in, so does more evidence of recent avalanche activity. This was a widespread cycle of large to very large avalanche with our first HIGH danger day and Avalanche Warning.

This D3 avalanche on the “Camel Back” is the largest avalanche reported this winter and signals a persistent slab avalanche problem that is moving around the compass to the sunny southerly aspects.

Another sunny side persistent slab avalanche. This D2 ran on the South face of Baldy on mid-pack weak layers.
The latest loading event brought the avalanches closer to town as seen here on the hillside near Meridian Lake. Distribution of avalanches encompassed all elevations and many aspects.

Incident, accidents, close calls

This week, there were no major incidents, accidents or close calls reported to the CBAC. Check out a report [here](#) and [here](#) for a few remotely triggered avalanches from our area.

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

This was an active week with a major storm cycle followed predictably by a major avalanche cycle. After drying out for a week or so under a large area of high pressure, a stormy pattern looks to return by the middle of the week as seen in the above 6-10 day forecast which is advertising above normal precip and above average temps. We will look forward to the possibility of moisture rich storms moving in from the SW over the Christmas Holiday.