2015-2016 Season Summary. Crested Butte Avalanche Center

By Zach Guy, Executive Director of CBAC.

The 2015-16 winter season in Crested Butte, Colorado was highlighted by two major storms and avalanche cycles, repeat offenders plaguing our snowpack, and some unusual and challenging persistent weak layers. Our forecast center made dramatic improvements this year: we brought on our first full-time forecaster/director since the center opened in 2002. Forecaster field days increased by 30%, fieldwork media content (videos, profiles, and photos) on our website quadrupled, both our social media content and audience doubled, and attendance at outreach events and our fundraising both increased by roughly 30%.

Figure 1: 11/7/15. The first human triggered avalanche of the season on Mt. Baldy.

Avalanche season kicked off on November 7, 2015, when a pair of skiers triggered a large slab avalanche on Mt. Baldy (Figure 1). A series of small storms and long dry spells into December established our classic early season snowpack: shallow, faceted, and ready for show time. The Christmas storm cycle seems to be a recurring pattern here in Crested Butte, consistently

adding an overwhelming layer of water-laden stress to the holiday season. This year's storm landed on December 21st, and doubled or tripled our snowpack by the time it exited the day after Christmas. Although we didn't quite reach the volume for full track avalanches, the extent of avalanching was the most impressive I've seen in my five years here (Figure 2). Dry conditions returned for the next few weeks, and while booming collapses on low angle terrain continued to rattle the nerves of travelers and our forecast team, it became increasingly clear that most paths had flushed full width or in a big way during our "Christmess cycle". It was also painfully obvious that our low angle snowpack assessments for the rest of the season would hold little value in comparison to most of our start zones which were now shallow and becoming exceptionally weak and faceted again once again.

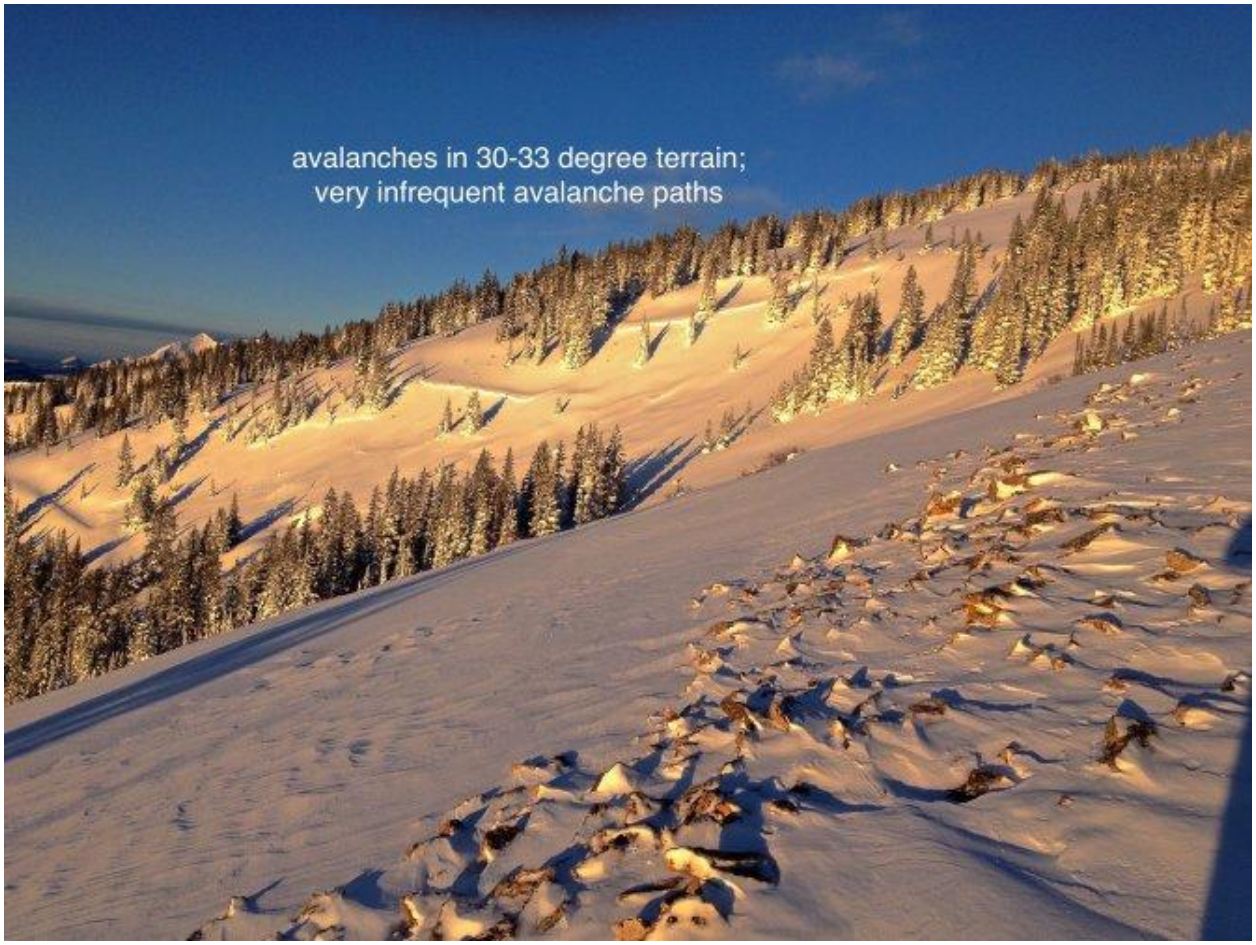

Figure 2: Extensive avalanche activity was observed during and after the "Christmess" cycle, with some very unusual crowns. "Only the third time I've seen these paths slide in 20 years." Credit: Ben Pritchett

The next load began to arrive mid January, but only for our favored snowbelt. The Ruby Range picked up over 5 feet of snow between January 14th and January 21st, while most of our forecast zone accumulated less than a foot. Although the danger wasn't as blatantly obvious as the Christmess cycle, incremental snowfall and northwest windloading were building another

round of slabs onto leeward slopes where a tricky facet/crust combination lurked from our early January dry spell. On the first clear day after the storm, a group of 6 locals opted to forego a tour into bigger terrain given the dangerous snowpack conditions. Instead, they picked a seemingly safer alternative to build and session a jump in some small, rolling terrain. Two members remotely triggered a 3-foot persistent slab on the slope above them while snowmobiling to the jump. Sadly, one of the riders was caught and buried deeply near some trees (Figure 3). Despite efforts from their group and Irwin Guides, the rescue was unsuccessful. We share our deepest condolences with friends and families involved.

Figure 3: 1/21/16. The crown of the avalanche that took the life of a local near Ruby Peak. The slide was remotely triggered from below the slope by two snowmobilers riding abreast, and one of the riders was buried deeply near a tree well. Credit: Dave Kozlow

It usually takes the jet stream and big Pacific moisture to line up overhead to deliver a knock-out storm for the rest of our zone which doesn't do as well orographically. Those stars aligned at the end of the month, with 3+ feet of snow (2.5"+ SWE) arriving between January 31st and February 1st across our whole forecast area. The combination of shallow, rotten start zones from our Christmas cycle and facet/crust/surface hoar combinations from sunny weather in January stood no chance, and we saw yet another widespread persistent slab cycle with hundreds of repeat offenders and impressive crowns littering the landscape once again (Figures 4 and 5).

Figure 4: 2/1/16. CBAC forecaster Zach Guy investigates a slide remotely triggered on a layer of surface hoar at the culmination of a major storm that ended on February 1st. Coincidently, our forecasts took on the theme of the movie Groundhog's Day for the next couple weeks, given these tricky persistent weak layers. But unlike Bill Murray's character, who quickly develops expertise with each passing day to improve his situation, our Crested Butte snowpack doesn't give travelers the same kind of direct feedback on each slope or on a regular basis. Credit: Ian Havlick

Figure 5: 2/1/16. A fascinating pattern of very thin soft slabs observed above Cement Creek Road near Crested Butte. Credit: Zach Guy

Four weeks of mostly dry and unusually warm weather carried us through February and into the first week of March. A record setting wind event on February 18th flattened hundreds of trees and brought a layer of desert dust with it. Scarp Ridge hit 117 mph, and nearby Monarch Pass recorded the highest wind speeds ever measured in Colorado, at 148 mph. After 2 weeks of low avalanche danger, we finally waved goodbye to the dominant high pressure ridge on March 7th, and a series of 3 progressively stronger storms arrived on weekly intervals through the rest of the month. The dust layer marked the boundary of our month-long dryspell, and this dust/facet/crust combination continued to plague us through the month on shady aspects (Figure 6). With each storm, we saw a handful of slabs failing on that layer, and these slabs became increasingly larger and more unpredictable with each storm. In the last few days of March, there were two close calls involving this dusty persistent weak layer. The first was a skier caught and partially buried on Schuylkill Ridge, a slope with dozens of previous tracks that week. The second was a snowboarder who triggered a large slab low in the Climax Chutes but rode off of it before significant debris ran over a large cliff band.

Figure 6: 4/3/16. March and April brought some unusual or challenging dry slab avalanches over dust layers, and we had several close calls involving experienced travelers. This slide failed naturally during a benign weather pattern, the day after two skiers had descended the same slope. Credit: Tom Kelly

Warm, spring weather arrived in April, and multiple nights without refreezing spurred a wet avalanche cycle at lower elevations around April 10th. We published our last daily advisory on April 17th, but El Nino continued to bring wet weather into May. As always, the CBAC optimistically but unrealistically looks forward to a deep and stable snowpack next year.

Figure 7: 4/10/16. Debris from a natural wet slab on Gibson's Ridge.

End of Season Stats (July 1 - May 15)	2014/15	2015/16
Website		
Sessions	No Data	58,295
Pageviews	No Data	119,365
Daily Advisories Published	139	146
Off-Season Snowpack Updates Published	No data	9
Facebook		
Likes	2722	3841
Reach (Estimated from graphs)	1500/post	2,500/post
Posts	120	198
Email		
Daily Advisory Subscribers	217	403
Daily Open Rate (Estimated from graphs)	No data	38%
Instagram		
Posts	0	104
Followers	0	580
Youtube		
Videos	13	28
Views	9854	20,107
Watch Time (minutes)	13,112	34,142
Radio	5/wk on KBUT	7/wk on KAYV and KBUT
Events		
Awareness Night Attendance (estimated)	250	325
Beacon Brushup Attendance (estimated)	75	130
Published Field Observations		
Total Observations from CBAC staff	112	149
Public Observations	258	271
Published Media (photos, videos, profiles)		
Total Media from CBAC staff	88	330

CBAC Budget

Our operating budget comes from YOU. Roughly 70% of our income this year was from your personal donations or from events that you attended. About 20% comes from local businesses supporting our cause. Our budget is small and our community support is what keeps our avalanche center growing and improving to meet the needs of our users. Thank you.