

2023-24 Annual Report



Shasta/Trinity National Forest MOUNT SHASTA AVALANCHE CENTER



Summit Sponsors



Reported by:

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Season Summary

The December drought furnished meager conditions, thus a slow start for the Mount Shasta Avalanche Center. Nick dealt with this by getting a puppy. The rest of the all-star gang, Sam Clairmont, Cory Beattie and Eric Falconer took it as an opportunity to warm up writing skills and get in the daily flow of operations. The avalanche center and climbing ranger program is proud to have safely completed its 26th season. Our unique program of work involves avalanche forecasting and climbing condition reports, educational outreach, developed recreation management, OSV snow patrols, climbing use and SAR operations. We are grateful to have a fully funded Forest Service staff of five.



1 The boots on the ground and fingers on the keyboard behind the Mount Shasta Avalanche Center. Left to right, forecasters Sam Clairmont, Cory Beattie, Eric Falconer and Director, Nick Meyers

Mid-January, Mother Nature flipped the winter switch. For the remainder of the season, it was good! Faithful to the maritime regime, our northern California, El Nino winter was characterized by warm and wet storms with snow levels often above 5,000 feet. This kept driveways snow free within city limits, to some's delight. The Old Ski Bowl weather station, near treeline (7,800 feet) on Mount Shasta, reached its zenith near the end of March with 16 feet of snow on the ground. High mountain peaks were completely plastered. Continental comrades can brag about cold smoke, but that stuff doesn't stand a chance on a volcano. Shasta plaster, on the other hand... that's *our* stuff. It was one of those winters: if you don't get the powder *right away*, you don't get the powder. All told, Shasta plaster is excellent at surviving our famed northwest wind events and ensuring a robust spring ski and climbing season. By the end of the season, the area was near or above historical average, and the mountain shining bright, "As lone as God, and white as a winter moon, Mount Shasta starts up sudden and solitary from the heart of the great black forests of Northern California". - Joaquin Miller



2 Mount Shasta's south and west sides with a stiff northwesterly wind

Avalanches were common during storm cycles. Most notable was our President's Day avalanche in February. A very large (D4) natural avalanche was discovered in Avalanche Gulch on the south side of Mount Shasta. This avalanche was the largest observed for the season. In the days leading up to the slide, a heavy hitting winter storm brought 3 to 4 inches of water, resulting in feet of snow paired with SE wind. The 10,500-foot, wind loaded westerly aspect of Green Butte Ridge eventually let loose, sending an incredible mass of snow (measured on local seismographs) down the mountain, travelling 2.5 miles and 3,200 vertical feet. The avalanche scoured ~60-foot walls within the track, and deposited snow ~80 feet deep at the 7,300-foot terminus, a mere 10-minute walk from Bunny Flat Trailhead. Fortunately, the Everitt Memorial Highway, our main access road, was closed during this storm cycle. Nobody was caught in the slide, and infrastructure was not compromised. This was a true spectacle of nature. The avalanche was almost identical to the 2019 Valentine's Day avalanche, albeit a bit larger.



3 The President's Day avalanche. More photos available on the archive at www.shastaavalanche.org



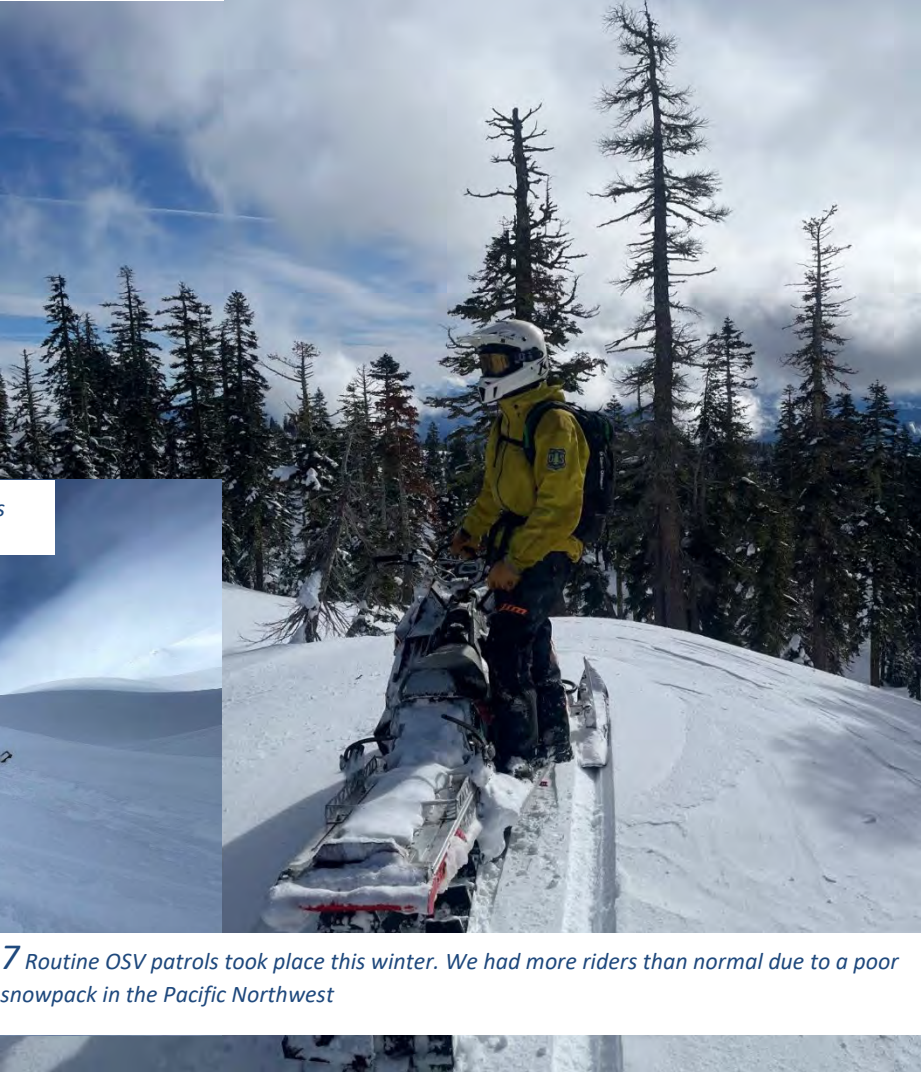
4 Additional President's Day avalanche photos, a true spectacle of nature!



5 A lone snowmobiler in Old Ski Bowl on Mount Shasta

Storms were frequent this winter. With that came closed roads and difficult, deep snow access conditions. Plows were not able to keep up on the Everitt Memorial and Castle Lake roads. Snowmobile riding was a big theme for the team. Schools in session! Center staff put

ample time behind bars this season. All can attest that deep powder snow riding is sublime, but not for the faint of heart when learning. Some may have used their shovels for stuck snowmobiles more than snow pits.



6 Rangers aid snowmobilers while out on OSV patrols



7 Routine OSV patrols took place this winter. We had more riders than normal due to a poor snowpack in the Pacific Northwest

During the forecasting season, we are happy to report zero avalanche incidents involving humans. As fate has it however, after daily forecasts had ceased on April 15th, we had two climber triggered wind slab avalanches in late April and early May, both within a week apart and on the same slope, left of Redbanks, ~12,500 feet. A late season storm brought a foot plus of new snow to the mountain, followed by a multi-day northwest wind event. The



8 Two climber triggered avalanches occurred in late April and early May. One of the injured suffered an arduous and painful, 12-hour ground evacuation with a broken femur. All climbers involved will make a full recovery.

climbers were not buried but took 1,000-foot slides for life down into Avalanche Gulch

below. One suffered a complete femur break, resulting in an arduous and painful, 12-hour ground rescue. Air resources were not able to fly due to whiteout conditions. The other endured a badly broken ankle and puncture wounds from mountaineering tools and was evacuated by helicopter. One climber was able to self-arrest off the slab and self-rescue. Avalanche center staff continues to assist Siskiyou County search and rescue operations for all incidents on the mountain. Spring weather on Mount Shasta is fickle to say the least. Flip flops and beers in a sunny parking lot are not an indicator of safe conditions as you venture into alpine terrain.



9 One of many free companion rescue clinics offered by the avalanche center throughout the season, held at the Bunny Flat trailhead



of what we do.

The Friends of the MSAC is flourishing. FMSAC is a volunteer group with one paid position, Executive Director, Casey Glaubman. The group represents the soul of adventure and passion for backcountry mountain recreation and simply, just likes to have fun. Events this year included

On the outreach, education and events side of things, the center delivered 21 avalanche related presentations this season, reaching over 500 people. Casey Glaubman, Friends of the MSAC executive director and outreach and education coordinator, provided the lion's share of these to eager crowds throughout northern California and southern Oregon. Presentations were provided to the public, school groups, the National Weather Service and Shasta-Trinity and Klamath National Forest employees. A snowmobile specific workshop was also provided to motorized users. Free avalanche education continues as a core component



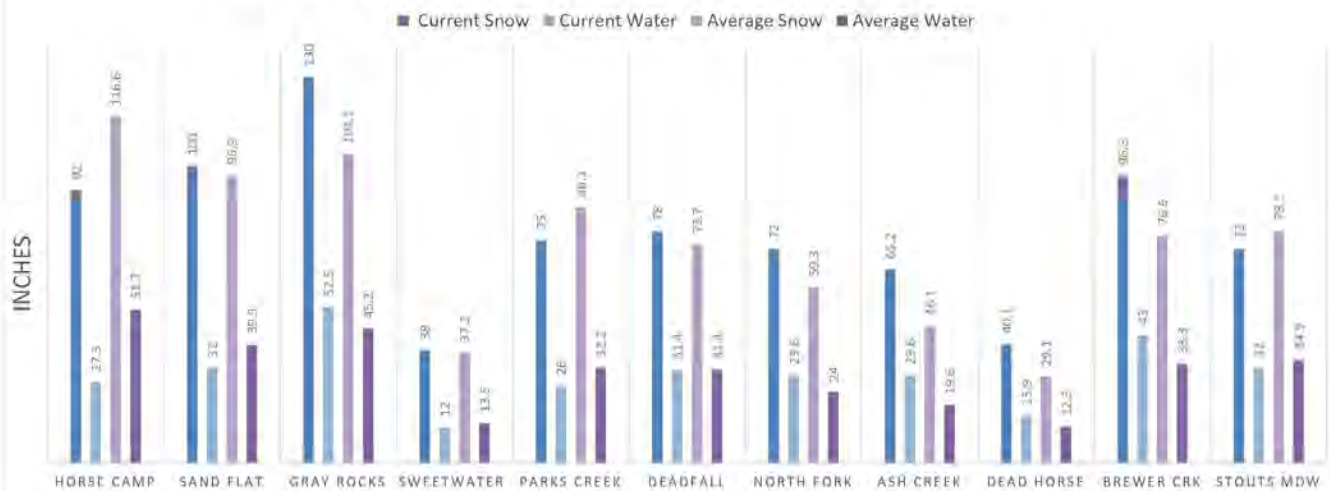
10 *The Kings Of Queen, A Queen Tribute cover band, highly recommended!*

a Giving Tuesday party, two movie nights, the annual Snow Ball – our largest fundraiser, the Shasta Ascension Backcountry ski race and to wrap it up, a community appreciation party. We extend a huge thank you for all their effort and support this season. Overall, things are going swimmingly for the center. A permanent, full-time Forest Service staff, coupled with a strong partnership between the rock-solid Friends group and local community...what else do you need? *Just SNOW!*



Snow Stats

MT. SHASTA AREA SNOW SURVEY RESULTS AS OF APRIL 6, 2024



*The above snow survey data was collected and compiled between March 25th and April 3rd across the Shasta-McCloud Management Unit, on the Shasta-Trinity National Forest. Snowpack measurements show generally close to historical average results. Snow depths across most sites have remained the same or dropped from last month due to the warm temperatures and extended sunny days. In addition to the usual sites, this month, data was collected from the North Fork of the Sacramento, Dead Horse, and Ash Creek. The Deadfall Lakes course is surveyed for the Trinity River watershed. Parks and Sweetwater courses are surveyed for the Shasta River watershed. Sand Flat, Horse Camp, Gray Rocks, and the North Fork are surveyed for the Sacramento River watershed. Dead Horse, Stouts Meadow, and Brewer Creek are surveyed for the McCloud River watershed. For more information and historical data, please visit the California Department of Water Resources webpage at <http://cdec.water.ca.gov/snow/>

April 7, 2024

MT. SHASTA AREA SNOW SURVEY RESULTS AS OF April 6, 2024

Sacramento, Shasta and Trinity Watersheds*

| Course | Elevation(ft) | Last Month Snow(in) | 2024 Snow(in) | 2024 Water(in) | 2023 Snow(in) | 2023 Water(in) | Hist. Average Snow(in) | Hist. Average Water(in) |
|--|---------------|---------------------|---------------|----------------|---------------|----------------|------------------------|-------------------------|
| Horse Camp | 7900 | 105 | 92 | 27.3 | 156 | 46.5 | 116.6 | 51.7 |
| Sand Flat | 6800 | 94 | 100 | 32 | 110 | 25 | 96.9 | 39.9 |
| Gray Rocks | 6200 | 136 | 130 | 52.5 | 138 | 37 | 104.1 | 45.2 |
| Sweetwater | 5850 | 41 | 38 | 12 | 74 | 27 | 37.2 | 13.5 |
| Parks Creek | 6700 | 77 | 75 | 26 | 120 | 45 | 86.1 | 32.2 |
| North Fork Sac | 6900 | N/S | 72 | 29.6 | 111 | 29.6 | 59.3 | 24 |
| Deadfall Lakes | 7200 | 82 | 77.9 | 31.4 | 111 | 41 | 73.7 | 31.4 |
| Averages of Courses Sampled | | | 84 | 30.1 | 117.14 | 35.9 | 82.0 | 34.0 |
| Percent (%) of Historic Average | | | 102 | 89 | 143 | 106 | | |

N/S = Not Sampled

Similar Year: 1999, 2004, 2019

McCloud Watershed*

| Course | Elevation(ft) | Last Month Snow(in) | 2024 Snow(in) | 2024 Water(in) | 2023 Snow(in) | 2023 Water(in) | Hist. Average Snow(in) | Hist. Average Water(in) |
|--|---------------|---------------------|---------------|----------------|---------------|----------------|------------------------|-------------------------|
| Brewer Creek | 6250 | 95 | 96.8 | 43 | 166 | 64.5 | 76.6 | 33.3 |
| Stouts Meadow | 5400 | 56 | 72 | 32 | 172 | 37 | 78.2 | 34.9 |
| Ash Creek | 5000 | N/S | 65.2 | 29.6 | 112.1 | 50.5 | 46.1 | 19.6 |
| Dead Horse | 4500 | N/S | 40.1 | 15.9 | 96 | 39 | 29.1 | 12.3 |
| Averages of Courses Sampled | | | 69 | 30.1 | 137 | 47.8 | 57.5 | 25.0 |
| Percent (%) of Historic Average | | | 119 | 120 | 237 | 191 | | |

Website/Social Media/Email

Website: We apologize for missing numbers this year. Our analytics data was not acquiring over the winter, unbeknownst to us.

- Number of MSAC Avalanche Advisories: 136
- Number of Unique Website Users: n/a
- Total Number of Website Visits: n/a
- Mobile Users: n/a
- Average Session Duration: n/a

Social Media / Email

- Number of Facebook Followers: 9,607 (+.07%)
- Number of Instagram Followers: 8,516 (+1%)
- Number of Advisory Email Subscribers: 248 (-6%)
- Total of Advisory Emails Sent: 33,728

Education

- Number of People Reached: 475
- Number of Avalanche Presentations Delivered: 21 (+110%)

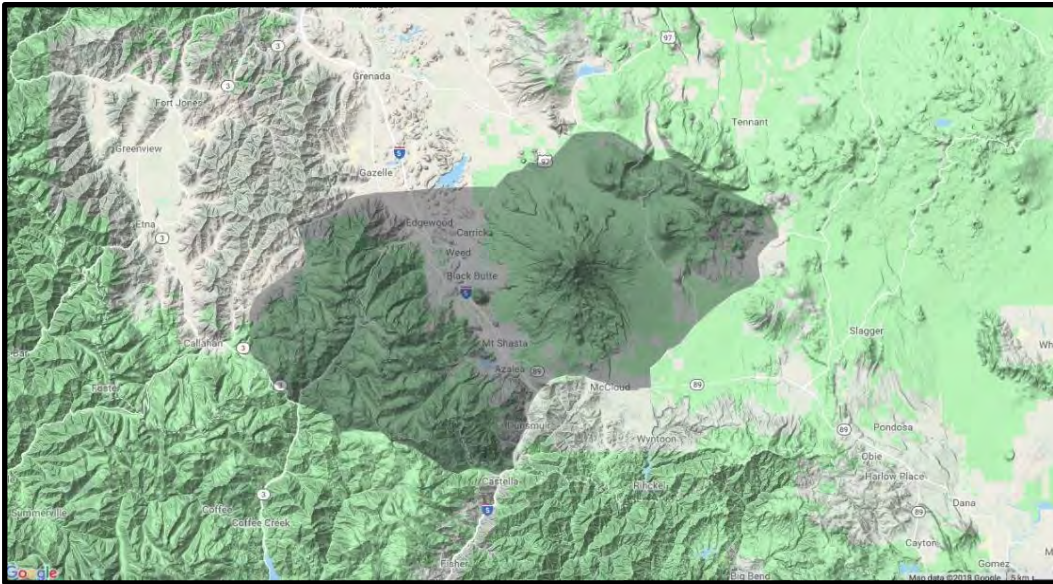
Avalanches 2023-24 Season

- Number of U.S. avalanche fatalities: 16
- Number of fatalities in the MSAC Forecast Area: 0
- Number of people caught in avalanches in the MSAC Forecast Area: 0
- Number of people caught in avalanches in the MSAC Forecast Area (out of season): 3

Avalanche Forecasts

The Mount Shasta Avalanche Center's primary mission is to communicate current avalanche, snowpack and mountain weather information through our daily avalanche forecasts. A total of 136 advisories were published between December 1, 2023, and April 14, 2024 on our website www.shastaavalanche.org. In addition, the website provides information about current conditions relating to recreational use, recent observations of avalanches, skiing/snowboarding/snowmobiling and climbing conditions, and general information on recreational opportunities in the mountains around Mount Shasta.

The image shows a screenshot of the Mount Shasta Avalanche & Climbing Information website. The top left features the logo for the Mount Shasta Avalanche Center, and the top right features the logo for the U.S. Forest Service. The main content area is titled "Forecast Area and Weather Station Map" and includes a map of the Mount Shasta area with various weather stations marked. To the right of the map is a sidebar with navigation options: "Filters", "Table", "MEDIA", "FORECASTS", "OBSERVATIONS", and "STATIONS". Below the map is a social media profile for the Mount Shasta Avalanche Center, showing 944 posts, 8,441 followers, and 154 following. The profile description includes the center's mission and contact information.



11 *The MSAC's avalanche forecast area that includes Mount Shasta, Castle Lake and the Eddy Mountains and east of Mount Shasta, Ash Creek Butte and the Tri-Forest Snowmobile Trails network*

To provide the most accurate information possible, forecasters go into the backcountry regularly to gather observations of current conditions. In the winter, forecasters publish the daily avalanche forecast by 7 a.m. and then choose a field destination to gather information, using skis and snowmobiles to access our 800 square mile advisory area. Test-pit measurements, observations, and photographs are posted the same day on the website and viewed by the public. In addition, public observations can also be posted to the website, from the forecast area and within the greater sphere of influence outside the forecast area. These areas include Crater Lake and Lassen National Park, the Trinity Alps Wilderness, Carter and Etna Summit and the Mt. Ashland area.

Avalanche Danger Ratings 2023-24 Season

| | | | | | |
|--|------------------|-----------------------|---------------------------|-------------------|---------------------|
| Overall Avalanche Danger Rating | LOW 43 | MODERATE 57 | CONSIDERABLE 24 | HIGH 12 | EXTREME 0 |
|--|------------------|-----------------------|---------------------------|-------------------|---------------------|



12 Another notable avalanche occurred in Sun Bowl on January 13th. High danger was rated above treeline with wind slabs as the primary problem. The avalanche broke about 3 feet deep and was an impressive hard slab

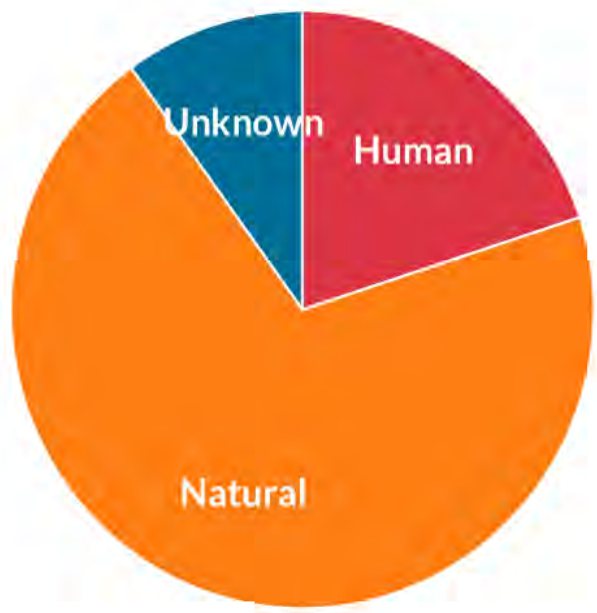
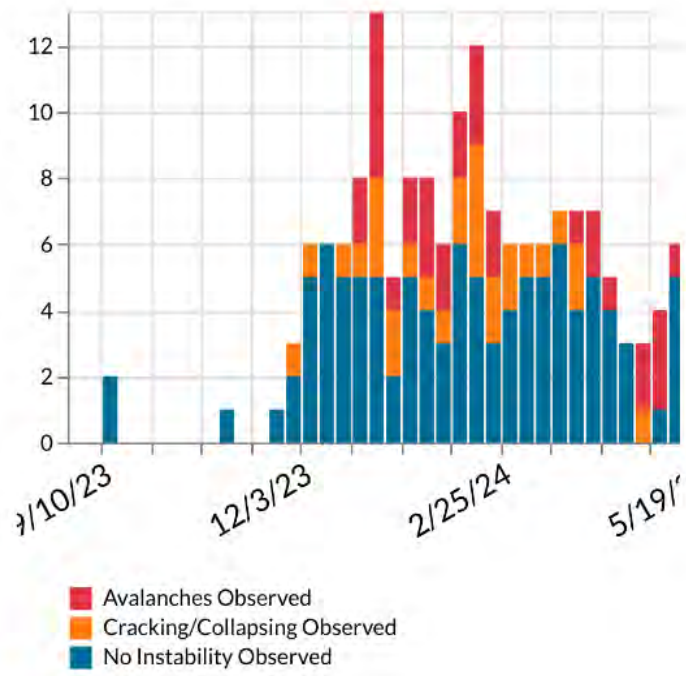
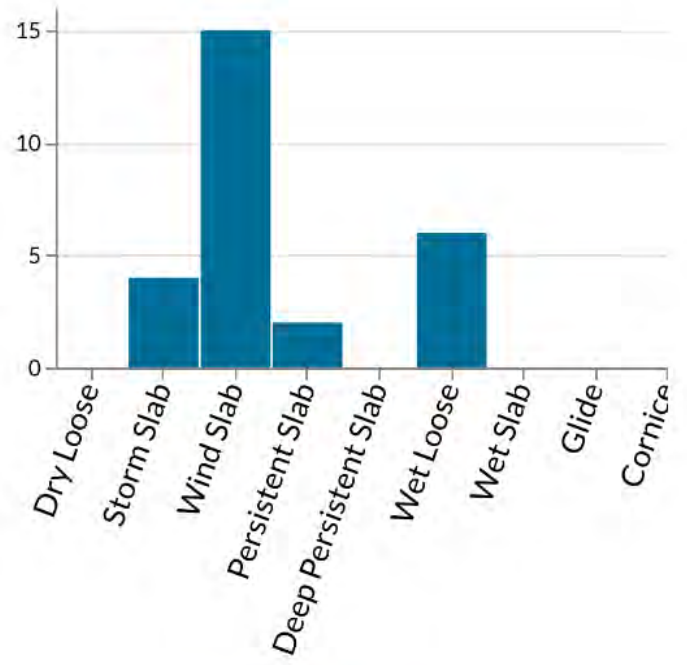
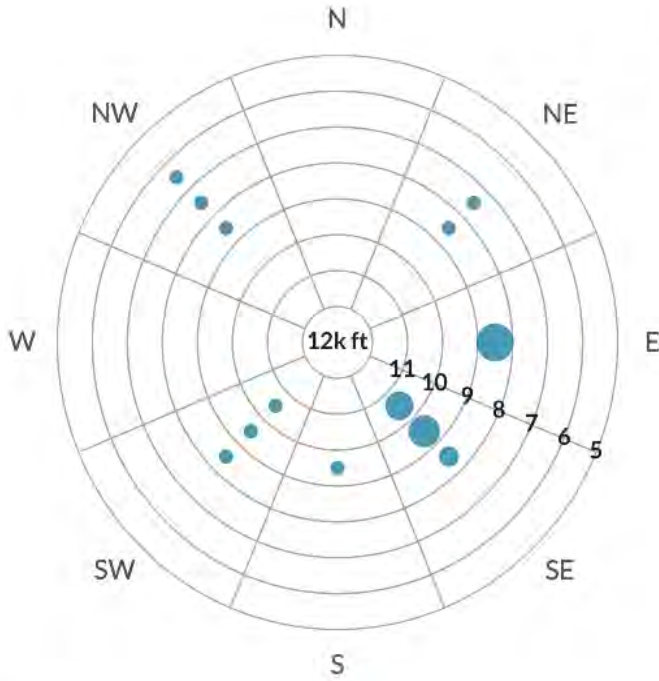
2023-2024 SEASON

16 US fatalities

| Activity | Killed |
|--------------------------|-----------|
| Skier † | 10 |
| Snowboarder † | 2 |
| Snowmobiler | 3 |
| Snowshoer/Climber/Hiker | 0 |
| Other | 1 |
| Total | 16 |
| † Inbounds skier/boarder | 1 |

¹³ Accident reporting can be found at www.avalanche.org

Recorded Avalanche Metrics



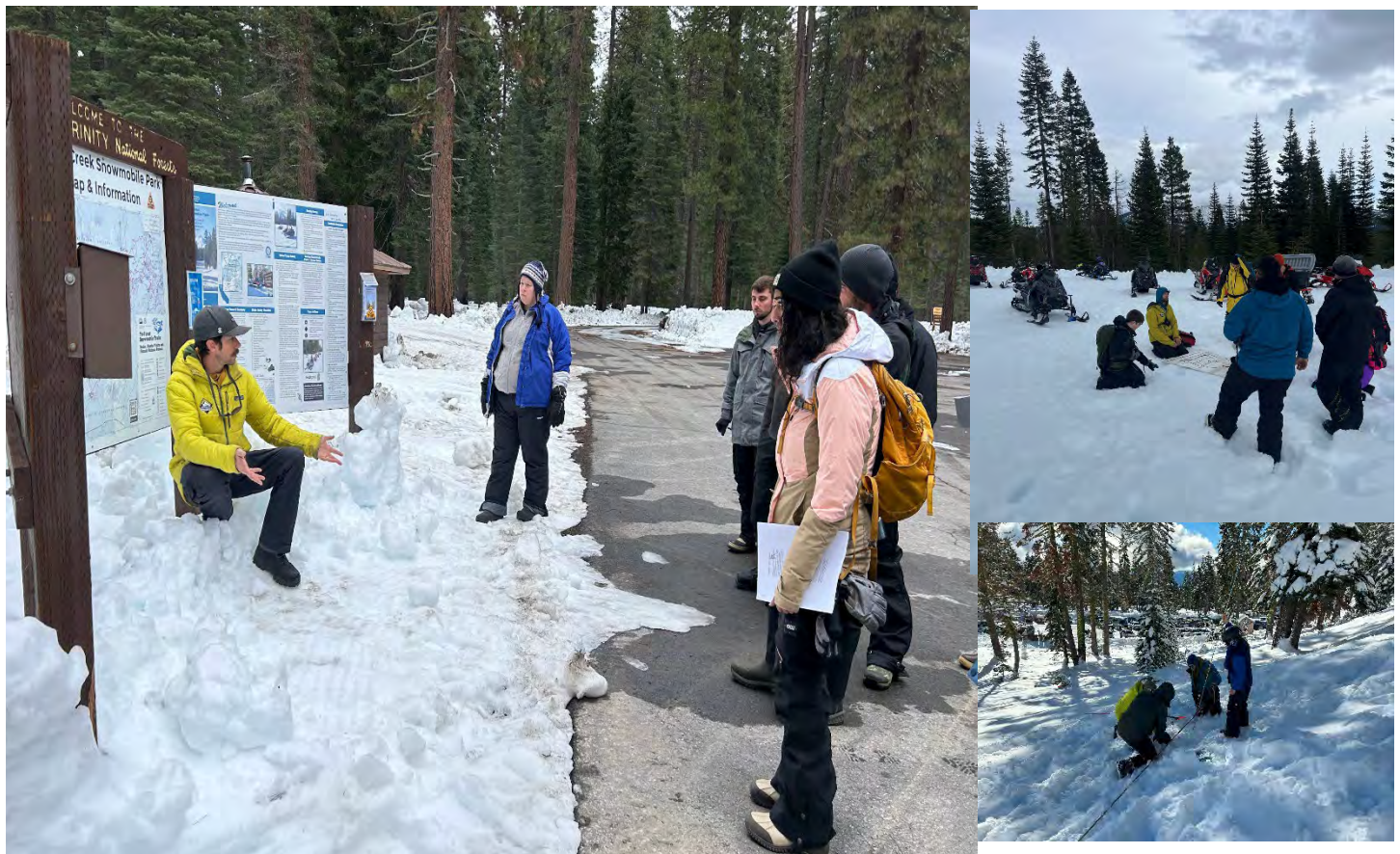
14 These graphics are generated from recorded avalanches within the forecast area for the 23/24 season

Avalanche Education

The Mount Shasta Avalanche Center delivered 21 avalanche presentations this season, reaching over 475 people throughout northern California and southern Oregon. Offered to all public, the MSAC provided free avalanche awareness and companion rescue clinics the first Saturday and Sunday of December, January, February, and March. Avalanche awareness was held at Deadwood Supply Company in Mount Shasta, and companion rescue clinics were conducted at the Bunny Flat trailhead. Training was also provided to Siskiyou County school groups, the National Weather Service, as well as Shasta-Trinity and Klamath National Forest personnel.

| Date | Speaker | Event | Location | People |
|------------|----------------|---------------------------|------------------------------------|--------|
| 12/02/2023 | Casey, Nick | Know Before You Go (KBYG) | Deadwood | 23 |
| 12/03/2023 | Casey, Cory | Companion Rescue | Bunny Flat | 17 |
| 12/15/2023 | Casey | KBYG/Companion Rescue | Golden Eagle | 20 |
| 01/04/2024 | Casey, Nick | KBYG | National Weather Service (virtual) | 10 |
| 01/06/2024 | Casey | KBYG | Deadwood | 40 |
| 01/07/2024 | Casey, Eric | Companion Rescue | Bunny Flat | 35 |
| 01/09/2024 | Casey, Eric | KBYG/Companion Rescue | Charter School | 15 |
| 01/11/2024 | Casey, Clayton | KBYG | Redding Sports LTD | 35 |
| 01/25/2024 | Casey, Eric | KBYG/Companion Rescue | Golden Eagle | 18 |
| 01/27/2024 | Casey, Cory | KBYG/Comp Rescue (SnowMo) | Deer Mountain | 10 |
| 02/03/2024 | Casey | KBYG | Deadwood | 30 |
| 02/04/2024 | Eric, Sam | Companion Rescue | Bunny Flat | 9 |

| | | | | |
|------------|------------------|--------------------------------|--------------------------|----|
| 02/07/2024 | Casey, Eric | Forest Service SnowMo training | Four Corners SnowMo Park | 30 |
| 02/08/2024 | Nick | Companion Rescue | Nordic Center | 20 |
| 02/14 | Casey | KBYG/Companion Rescue | Weed Elementary | 17 |
| 02/15/2024 | Sam, Cory | KBYG | Virtual | 47 |
| 02/15/2024 | Nick | Companion Rescue | Nordic Center | 20 |
| 03/02/2024 | Casey | KBYG | Deadwood | 22 |
| 03/03/2024 | Casey, Eric, Sam | Companion Rescue | Sisson Ballfields | 7 |
| 03/07/2024 | Nick | Companion Rescue | Nordic Center | 25 |
| 03/14/2024 | Cory | Companion Rescue | Nordic Center | 25 |

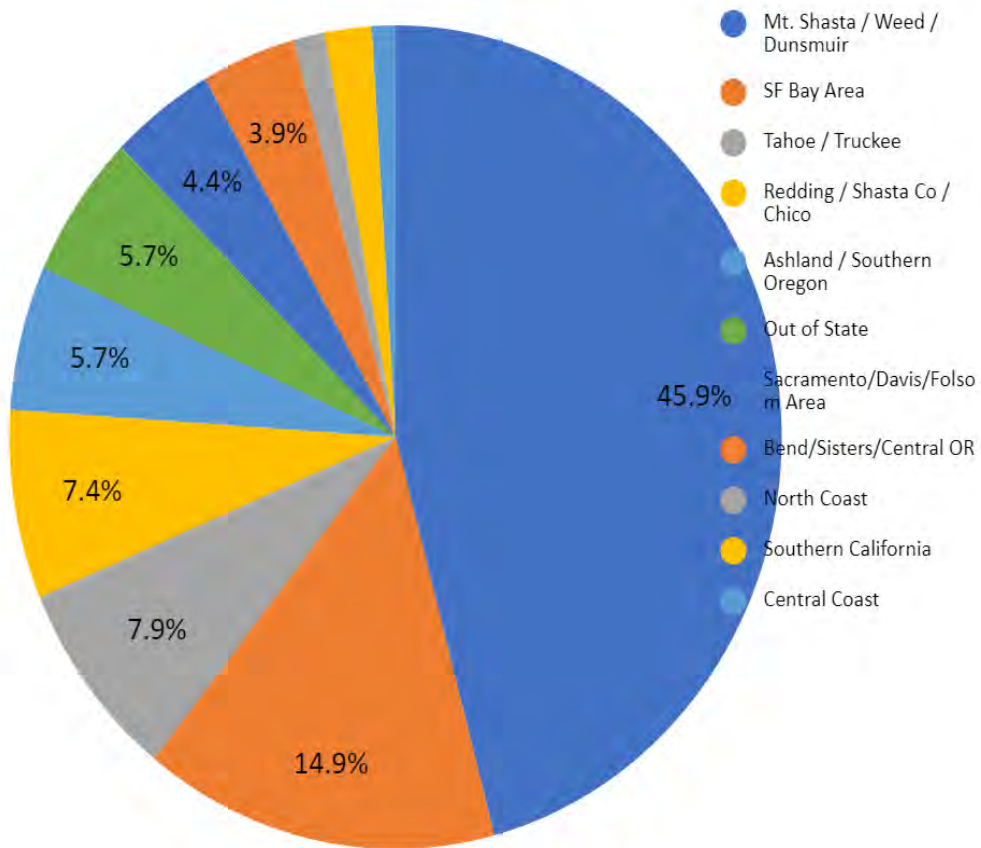


15 Avalanche Center staff conduct many educational classes over the course of the winter to all users

Finances of the MSAC

The Shasta Trinity National Forest funds approximately 50% of the MSAC's total operating cost and the FMSAC the other 50%. The funds come via a mix of California state OSV grant, fundraising and volunteer hours, or contributions in-kind.

2024 Membership / Donor



Friends of the Mount Shasta Avalanche Center

The Friends group is a nonprofit group that was created in 2002 and is an essential component of the avalanche center. The Friends fund and operate the MSAC website and all our remote weather stations. They also organize all fundraising events, as well as organizing and running the education and outreach components of the avalanche center.

FMSAC is a volunteer group with one paid position, the Executive Director, Casey Glaubman.

FMSAC board members include the president Hanne Meyers,

treasurer Jason Koster, secretary Clayton Coles, Sean Malee, Dave Brown, Nick Joslin, Stacia Anderson, and Justi Hansen.

The group represents the soul of adventure and passion for backcountry mountain recreation in the greater Mount Shasta area. We extend a huge thank you for all their effort and support this season.

2024 Mount Shasta Ascension Race

Registrant Statistics

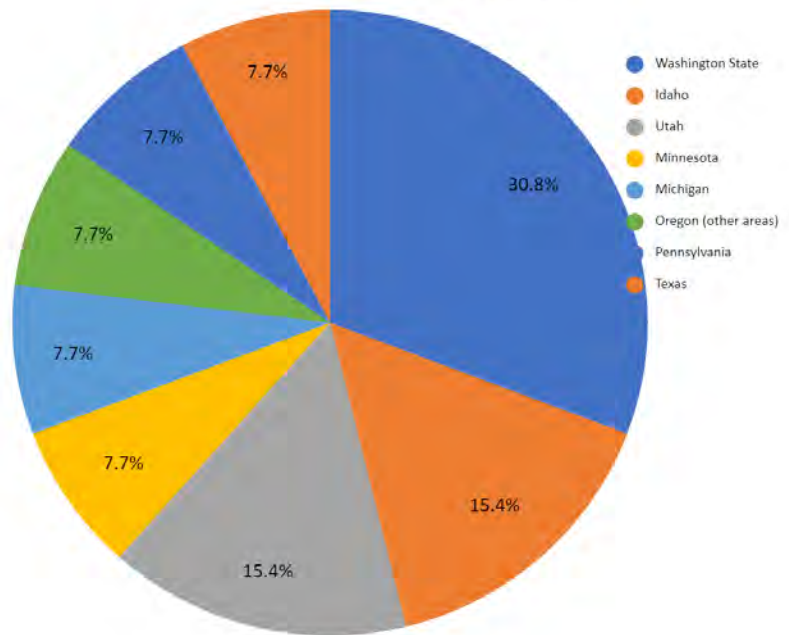
Registrant Attendance

| Category | Quan. | % of Tot. |
|----------------------|-------|-----------|
| Registrants | 113 | |
| Pre-Register | 78 | 69% |
| Register Day of Race | 35 | 31% |
| Racers | 96 | 85% |
| No Show | 17 | 15% |

Registrant Address Region

| Category | Quan. | % of Tot. |
|----------------------------------|-------|-----------|
| Lake Tahoe Area | 24 | 21% |
| North SF Bay Area | 19 | 17% |
| Mount Shasta / Weed / Dunsmuir A | 18 | 16% |
| Ashland / Klamath Falls | 15 | 13% |
| Bend / Sisters Area | 11 | 10% |
| Redding/Chico Area | 7 | 6% |
| South SF Bay Area | 7 | 6% |
| Sacramento / Davis | 8 | 7% |
| Seattle, WA | 3 | 3% |
| Minnesota | 1 | 1% |
| Not Listed | 0 | 0% |

2024 Out of State Locations



This season, the FMSAC put on a Giving Tuesday party, two movie nights, the ever popular Snow Ball bash, the Mt. Shasta Ascension Backcountry Ski Race and a community appreciation party at the end of the season.

Weather Stations

MSAC maintains six weather stations within its coverage area - Castle Lake, Mount Eddy, Gray Butte, Old Ski Bowl, Ash Creek

Butte, and Ash Creek Bowl. These stations are crucial in providing data for our daily avalanche forecasts. They provide data such as temperature, relative humidity, snow depth, snow water equivalent, wind speed, wind direction, wind gusts, and wind chill.

Data from these stations is recorded and made available to the public on the MSAC website, providing a history of observed weather.













Daily Snowpack Log

This is our internal, daily avalanche, snow, and weather log. We don't typically share it, but thought we would include it in the report this year for anyone interested. You can count on misspellings, typos, poor punctuation and other non-standard notation!

- Nov 18th/19th = 10 inches. Winds NE - 28mph. Notes: Wet heavy snow. Storm under produced from what was forecasted:(Winds drifting snow onto southerly lee aspects.
- Dec 1 - first forecast of season. Little to no snow most of fx area. 10 inches at OSB station. Gullies beginning to fill in. Small storm yesterday, skiff of snow. More storms this weekend, but westerly flow keeping the action to the coastal mtns and north of us in the Cascades.
- Dec 2 - Two to three inches of new snow yesterday, another similar system today. About a foot on the ground at OSB. Windy, W/NW. West side areas not enough snow for recreation. On the mtn, have to boot to 7,800 feet before ski/skinning. Temperatures warming over next couple days.
- Dec 3 - Warming cycle starts. Freezing level rising to 7,700 feet. Light rain across fx area
- Dec 4 - Warming continues. Freezing level rises to 9,800 feet. No precip. Overcast.
- Dec 5 - Warming continues. No overnight freeze. Freezing level at 9,500 ft. High winds!
- Dec 6 - Storm came in warm and cooled as it brought 6" of fresh by the end of the day and another 8" overnight. Light to Moderate winds. Freezing level 7,500 feet descending to 5,500 feet. Low tide remains.
- Dec 7 - Temp steady. Freezing level near town. 2" overnight. Moderate westerly winds.
- Dec 9 - Temps warming slightly, valley fog and low clouds, winds died off, no new precip since dec 6/7. No precipitation in the forecast until ~Dec 16/17. One to two feet of snow on the ground. Mt Shasta only usable snowpack at this time.No avalanches yet this season.
- Dec 10 - Sunny and warm. Temp inversion (melt-freeze) is forming crusts at mid and upper elevations. Surface textures vary. Light to moderate winds from NW.
- Dec 11 - Sunny and warm. Temp inversion continues to forming crusts. Calm NE wind. Variable surfaces conditions.
- Dec 12 - Warm and sunny. Widespread breakable crust, varying in thickness and location. High winds aloft.
- Dec 13 - Warm and clear. Low tide and variable snow surfaces prevail. Isolated areas of surface hoar growing in north facing riparian areas.
- Dec 14 - Warm and clear. Low tide and unsupportable crusts are widespread at all elevation bands.
- Dec 15 - Continued warm and clear weather, valley air stagnation, inversions, mellow wind, poor mixing. Going from dry to wet late Sunday, we hope! No avalanches to report yet this season. Bunny Flat still only usable winter recreation trailhead.
- Dec 16 -17. High pressure continues
- Dec 18 - new low pressure arrives. Providing southerly flow
- Dec 19 - 11 inches of new snow. Moist and warm south flow brought heavy precipitation to the region. Snow manly above treeline, with rain below. Strong to southerly winds. No avalanches yet. Warm temperatures look to drop.
- Dec 20 - Five inches of new snow. Rain on snow most the day. Rain up to 8,800 feet. Light to moderate S-SE winds. Near and above freezing temps. No signs of wind slab avalanches, or any avalanches
- Dec 21 - Warm and clear. Condensed powder above 9,000 feet. Below there is a ¼" zipper crust. Snowpack is setting up and supporting riders.
- Dec 22 - Same, same, clear, high pressure. Not a lot of snow but well consolidated and skiable. Better skiing at elevation. Crusty down lower. Can still ski to Bunny! Strong NW wind aloft. Blowing snow sublimating. No avalanches or instability observed. Went to Helen Lake - NM
- Dec 23 - decent snow conditions. Strong northerly winds blowing snow up high. Building clouds. No signs of instability.
- Dec 24 - High humidity, cloudy. Soggy wet snow.
- Dec 25 - Overcast, light rain drizzles.
- Dec 26 - Mostly sunny. High clouds aloft. Incoming storm.
- Dec 27 - 6-8" of new snow fell during business hours. Obscured skies. Moderate to Strong southerly wind. WS problem fx; no wind slab observed in field. Steady temperature in the low thirties.

- Dec 28 - Warm. Freezing rain up 9,200 feet (likely higher) formed a rain crust. ATL winds could transport snow but low visibility prevented confirmation of wind slab development.
- Dec 29 - WET, nasty shasta day, fog, rain on snow, sleet, mist, windy out of south. Rain switched to snow at 1800 hours, 9 inches of wet snow over a 6 hour period overnight with light wind.
- Dec 30 - clearing skies with new snow. Surface crust up to 9,500 feet. Soft snow above that, with northerlies holding the best quality. Light wind
- Dec 31 - Death crust below and near treeline. Clear, calm, and partly sunny
- Jan 1 - Death crust below and near treeline. Clear, calm and very sunny. Likely a surface crust forming above 9,500 feet on solar slopes. No wind. Incoming storm. Many slick bed surfaces all elevations
- Jan 2 - Southwest flow delivered a decent storm. 10 inches of dry new snow. Lots of wind blowing snow around. Pre-existing crusty surfaces will host as bed surfaces for new snow. Temps stayed below freezing.
- Jan 3 - Tapering AM storm. 6-12" of new snow. Moderate to strong winds forming wind slabs observed on Dec. 30th Crust layer. Layer of concern just below this layer in fist hard snow.
- Jan 4 - Low clouds and calm wind BTL. NTL and ATL clear and windy. Temps below freezing. Small, 1 day old natural wet/dry loose on E Green Butte. Rider triggered small avalanche on Gray Butte on December 30th crust.
- Jan 5 - Finished up a two-day north wind event, ravaged near and above treeline terrain. No avalanches associated with wind event. Smorgasbord of snow surfaces. Icy glaze on exposed terrain. Storm incoming tomorrow, 6-10 inches in the fx. Colder temps and snow levels to 3k feet.
- Jan 6th, 7th - Cold temperatures. Northwest flow.
- Jan 8th - High humidity and a slight increase in temperatures damped snow surfaces that weren't exposed to the wind. Partly clear skies. Incoming storm with northwest extreme winds.
- Jan 9th - Incoming storm. Strong and extreme NW winds. Lots of blowing snow and drifts on south and east aspects. Scattered clouds. Stability tests were reactive on the weak snow beneath the December 30th crust layer.
- Jan 10th - OSB weather station received recorded 9.5 inches of new, dry snow. Eric and I found snow drifting to a foot or more in protected areas and in leeward aspects. Strong to extreme northwest winds transporting large amounts of snow.
- Jan 11th - Strong NW wind event, stripped much of the jan 10 snow away NTL/ATL. Soft snow plentiful below treeline. 50-60 inches of snow on the ground. No avalanches observed despite a ton of blowing snow.
- Jan 12th - Continued strong NW ahead of approaching storm. 5 inches of new snow at OSB overnight. Near and above treeline terrain displaying strong wind effect with exception to SE aspects where unconsolidated, dry snow is prevalent.
- Jan 13th - West winds brought 15-30 inches of new snow of about 9.5% density to Mount Shasta. Mount Eddy received about a foot, bringing the snow depth up to 4 feet. Below 6,000 feet the snow is wetter. Casey observed naturals along the EMH road cut to OSB and Cory triggered a couple of small test slides that broke in fresh cornices/wind slabs and entrained dry snow down the slope. Cory wishes he put dry loose as a problem as it was cold and the snow dry enough that it had not formed into a slab yet.
- Jan 14th - AVALANCHES! A natural avalanche cycle was observed. The majority of slides took place on south and east aspects above treeline with one or two on southwest aspects due to cross loading. Ten avalanches recorded. Wind slab avalanches that resulted from the 12th and 13th storm system. Crowns ranged from 1-5 feet. The weather shifted to warm, dry and stable.
- Jan 15th -
- Jan 16th - A warm and wet southwesterly system delivered rain and snow to the region. Snow level was about 6,500 feet. Moderate south and west winds blew. 4 inches of snow has fallen with over a half-inch of water. Hefty load!
- Jan 17th - Mostly cloudy skies, breezy westerly winds transporting the new snow near and above treeline. Entering warming trend.
- Jan 18th - Cloudy with fog on upper Mount Shasta. Light westerlies. No AST. No signs of instability. Above freezing temperatures up to 9,000 feet and lack of solid refreeze last night.
- Jan 19th - Day before big storm. Amazing lenticular clouds on mountain. Strong wind out of SE. Snow surface pretty beat, icy, breakable crust of all sort, sastrugi features. Skied to above treeline on Broadway with Miles. Precipitation began at 2100 last night, ~4 inches of new snow.

- Jan 20 - Storm day. High density snow 15%-20%. High danger. 3 inches of water has fallen over 36 hour period. 2.7 inches swe in 24 hours. Storm seems to be favoring eddies
- Jan 21 - 13 14 inches overnight. 2.25 SWE overnight. 5.5 inches SWE and 34 inches snow since Friday 1/19. Freezing levels have risen in the last 24 hours, putting rain on snow below 6,000 feet. Up high likely has way more snow with colder temps. CNRFC QPF called for 1+ inch SWE, Avy Weather Guidance said 2+, received 2.25. In this storm, guidance was more accurate.
- Jan 22nd - relatively dry and stable weather. Moist mountain top clouds. Above freezing temperatures, high of 39 degrees on GB. Surfaced crust formed up to 8,500 feet.
- Jan 23rd - Semi-Recent avalanches observed. Likely ran on Jan 21st. Sunny and clear weather, with calm wind. Lots of solar input baking slopes. Surfaces crust and variable surfaces observed up to 10k on all aspects. Most robust near and below treeline. Softening snow below treeline.
- Jan 24 - Small storm brought 6-10 inches of moist/wet snow, well bonded to prior breakable surface crust. No wind transport. Poor visibility. Snow levels near 6500 feet. Cleared off late in day. No unstable snow observed. Avalanche danger low. Warming in the forecast, snow levels projected to be 7500 feet with next storm
- Jan 25 - Warming trend. Wind shifting from NW to S flow. Sunny at bunny, cloudy and light snow on Gray Butte. Natural and human triggered avalanche cycle above treeline. Snow was/is available for transport.
- Jan 26 - Warm temps, southwest flow, atmospheric river. No overnight refreeze at OSB. Misty skies and 0.15" of rain overnight.
- Jan 27 - Warm, and wet. Poor refreeze, with freezing level around 9k. During the day freezing level likely reached 10.5k. 0.6 inches of water in the form of rain
- Jan 28 - Clouds cleared to sunny skies. No refreeze overnight. No precip. Calm to light winds. Still and warm day
- Jan 29 - Another very warm day. As of 5am, GB recording 45 degrees F. Building clouds later in the day.
- Jan 30 - Very warm! 50 degrees recorded at Gray Butte. Wet-loose snow sliding naturally. D3 wet-loose observed off Casaval Ridge. Calm to light SE winds.
- Jan 30 (had said Jan 30 but it looks like a day was skipped somewhere. it was definitely snowing and blowing hard on the 31st) - Now quite as warm, but still warm enough to loosen snow surfaces. North aspects remained firm. Incoming storm, A.K.A. ATMOSPHERIC RIVER!
- Jan 31 - Strong SSE wind, temps in upper 20s to low 30s. Dropping snow level to 4,500 feet and 24" at OSB by 0400 on 2/1.
- Feb 1 - EMH closed for the day. Natural cornice fall avalanche observed NTL on the NW slope of Mount Eddy (Deadfall). Damp, low visibility day.
- Feb 2 - Gray Rocks snow survey completed and Giddy Giddy tour. Recent storm snow well bonded to old snow surfaces. Signs of avy danger hard to come by but plenty of low density snow avail for wind. Minimal wind effect for once, good powder skiing near and above treeline! Temps stayed below freezing with mostly cloudy skies. Strong AR event expected for tomorrow.
- Feb 3 - Horse Camp, and Parks Creek Snow Survey done. Intermittent snow through the day. Winds were calm to light. Snow stayed cold and dry. Busy day on the mountain with motorized users.
- Feb 4 - Storm day. 28 inches at Eddy station. 22 in at Castle. 20 in at OSB, but this is due to the very strong winds keeping accumulations under the station low. Strong-extreme winds out of the SE.
- Feb 5 - Snow continues. 12-18 inches expected by end of day. Storm conditions should end by mid-afternoon. Winds will shift to the northeast and become light.
- Feb 6 - Post storm. A calm day weather wise. Mid-elevations clouds persisted with almost no wind. The sun shown on the upper slopes of Mount Shasta. Otherwise, the rest of the forecast region stayed shady. Temperatures hung near freezing levels. A sun crust may have formed on the solar lit slopes of Mount Shasta. Inverted snowpack structure found around Military Pass area.
- Feb 7 - Inverted snowpack below treeline is looking more right side up above 7,500 feet. Light winds across the forecast area left plenty of powder skiing below and near treeline. You can feel the aforementioned crust below treeline on southerly aspects. No recent avalanches or other red flags. Plenty of snow available for transport.
- Feb 8 - Sunshine and intermittent low clouds. Cracking observed in wind-drifted snow. Public and forecasters observed recent avalanches above treeline that were 1-3 days old. Light snow showers expected with moderate to strong northwest wind today.

- Feb 9 - Blustery, chilly, overcast sky, north wind. One natural avalanche in Anaconda drainage, small wind slabs settling and cracking. Good skiing and riding in protected NTL and BTL terrain. Poor viz ATL. Entering a period of high pressure. Not much weather expected for about a week. Super Bowl Sunday tomorrow - go Niners!
- Feb 10 - Sunny and warm. Calm winds down low. Moderate to strong winds above 10k.
- Feb 11 - Another day of high pressure, clear, sunny, warm. Winds have lightened a tad from yesterday.
- Feb 12 - High pressure. No precip. Moderate cloud cover. Light winds
- Feb 13 - High pressure. No precip. Moderate cloud cover still allowing for some radiant heating of snow surfaces but no wet-loose observed. Light winds. Melt freeze crust on most aspects. Variable surfaces near and above treeline.
- Feb 14 - Snow with moderate to strong SW wind. Snow level near 4,500 feet. Observed several moderately sensitive wind slab avalanches at Castle Lake: 1.5 ft deep, 150 ft wide,. D2 potential near and above treeline
- Feb 15 - Light snow with low visibility and fog. Malee reported a skier triggered avalanche on the SE ridge of Gray Butte. New snow on Gray Butte measures 33cm, top 10 cm firm wind slab above fist hard drier snow down to the old snow interface.
- Feb 16 - Temps in the high 20s to low 30s, no new precip. Light wind. Stormy period on deck, upwards of 5 inches of water is expected for the next 5 days. Snow levels forecasted to be 5-6k feet. Skiing is funky: wind board ATL, decent NTL, heavy and styrofoam like BTL. New snow will be good for a refresh!
- Feb 17 - First of a series of **storms** has arrived. Moderate to strong southeast winds with 2 reported avalanche occurrences early on in the systems arrival. Intense wind loading on leeward aspects. EOD, 9 inches by the Feb 18 morning
- Feb 18 - **storm**, 12 inches overnight. Short pause in precip, followed by intense snowfall overnight into the 19th.
- Feb 19 - **Storm** another 12 inches overnight with an additional five over the day. Multiple storm slabs triggered. Very touchy conditions. Reactive storm slabs in trees and exposed areas. No wind effect below treeline. Near treeline winds have been drifting moderate amounts of snow.
- Feb 20 - **storm**. Five inches of new snow. The snowpack has trended upside-down. Boot penetration to the crotch and waist. Actively blowing snow near treeline. Stability tests showing fracturing on several interfaces 30 cm down. Propagation on softer snow layer as well. No avalanches observed — yet!
- Feb 21 - Avalanche Gulch slid R5, D4.. likely on President's Day. Similar to Valentine's Day slide in 2019. Snow available for transport near and above treeline. Rain up to 5,000 feet, light snow showers above. Mostly cloudy sky.
- Feb 22 - Morning clouds gave way to afternoon sunshine. Roller balls observed, no avalanches.
- Feb 23 - Clear, calm, warm, very little wind, storm snow settled nearly a foot, no signs of avy danger! A gorgeous day. Prez Day slide is impressive as hell. Roads still closed, blower working. Clear weather for the weekend, then more winter next week!
- Feb 24- Similar to day prior, clear, calm and warm. Nothing too notable. Both blowers broken now, meaning prolonged access to Bunny Flat. No avy danger. A transition back to more winter like weather expected tomorrow (monday). A few inches in the fx. Larger storm set for later in the week.
- Feb 25 - Clear, calm, and still was the theme of the day. Crust and variable surfaces on south. Softer snow on north. Small wet-loose instabilities. No others signs of danger.
- Feb 26 - Minor wind event. Strong and gusty wind out of the northwest prevailed. A trace of new snow made for easy snow transport and small forming drifts near and above treeline. The storm departed mid to late day, but the winds stuck around. Plumes could be seen from town off the top of Mt Shasta and Eddy.
- Feb 27 - **wind continued** to strip and transport snow above 9,000 feet. Primarily wind affected surfaces exist near and above treeline. Widespread surface crust exists near and below treeline. Incoming storm!
- Feb 28 - Above freezing across the fx area. Wind shifted to SW, broken sky with building clouds throughout the day.
- Feb 29 - Storm brought 10 to 20 inches of new snow to the forecast area. It snowed at rates of one to two inches per hour from 0600 to 1200. By late afternoon, precipitation backed off, and the sun came out. No recent avalanches. Minor cracking observed.

- March 1 - Colder than normal temps, snow survey near average. Snow in morning, then blue sky, then snow in afternoon. Low density snow, 20 inches over past 3 days. Storm received a lot of hype, but a little underwhelming. Still, good skiing in light snow above 6,500 feet. Westerly flow. NTL/ATL obs lacking, roads still closed. No obvious signs of danger yesterday during McBride/Jack Flat trees tour.
- Mar 2 - 4-6 inches of new snow through the day. Cold temps continued, with light to moderate winds out of the west. 25-30 inches of snow at treeline since 2/29.
- Mar 3 - a couple inches of new snow through the day. Winds were light-moderate out of the SW-W. No instabilities observed. Right side up snowpack, with real unconsolidated and low density snow at the surface
- Mar 4 - Snow stayed protected below treeline. Near treeline small wind lips and drifts began to form around ridgelines and in gully features. Temperatures stayed well below freezing levels. The storm front arrived mid-day. Winds increased into the night with snowfall starting around 2am.
- Mar 5 - stormy conditions! Three to five inches of dry snow fell near treeline elevations. Wind loading was observed onto north and east facing slopes. Drifts and wind lips along convex features were proven to be reactive to a skier, resulting in small soft slab avalanches. No other signs of instability were observed. Temps remained cold and the sun was not seen
- March 6 - Mostly cloudy AM skies cleared to afternoon sunshine. Above freezing temperatures to about 9,000 feet. Roller balls are the only sign of instability observed. No evidence of recent avalanches following storm system
- March 7 - Bluebird day with light to moderate north wind occasionally gusting to strong. No signs of instability except for roller balls.
- March 8 - Clear, nice day. Incoming storms this weekend expected to bring a foot or two to the mtns. Snow depth 172 inches at OSB and 130ish inches on the west side.. Wind SE, avg 10mi/hr with gusts to 42. Widespread crusty surfaces, wet down low. Everitt Memorial Highway finally opened in the late afternoon. Stormy weather expected through mid march, then dryer and stable. Sad week in avalanche world, two forecasters dead (one non-avalanche related) and a couple other public as well died in avalanches
- March 9 - New low pressure system arrived. Only a few inches added through the day. Winds began to increase
- March 10 - 4 inches of new snow through the day at treeline. Less than forecasted. Winds were actively loading leeward aspects. Strong-extreme southwesterly winds
- March 11 - Mostly cloudy skies, with the last of a series of small storms arriving this evening. Anywhere from 4-12 inches is possible. Most likely on the lower end.
- March 12 - Five inches of new snow at treeline. Strong westerly winds near and above treeline. Poor visibility trending better as the day advanced. No signs of avalanche activity. Drifting still occurring along ridgelines and convex terrain.
- March 13 - No sign of instability. Hurrican force wind above treeline. Strong to extreme wind near and below treeline.Lenticular on the upper mountain, mostly sunny otherwise. Blowing snow but most is sublimating or accumulating further down slope than typical start zones.
- March 14 - Sunny and windy. Small wet loose and falling rime ice/roller balls in upper Avalanche Gulch. Snow surfaces range from AM crust to afternoon mush.
- March 15 - Sunny and windy. Winds continued to blow strong out of the northeast above treeline. Surfaces remained cool. Below treeline, surfaces warmed. No snow.
- March 16 - Sunny, and no wind. Temperatures rose a tad from yesterday. Surprisingly, there were not much signs of warming instability. This could be due to the wind compressed nature of the surface snow, taking an extra long time for the sun to permeate. GB recorded a low of 36 degrees overnight to 3/17.
- March 17 - Another day of high pressure. Slightly warmer temps from the previous day. No signs of instability or avalanche activity. Runnels observed in below treeline terrain
- March 18 - High pressure and warm weather prevailed. Snow surfaces continue to soften, but not enough to cause human triggered or natural avalanches to occur. Today will be another warm one, with ample sunshine and above freezing temps. Surfaces will be quick to re-bound and may naturally slide.
- March 19 - More high pressure. Above freezing temperatures, calm wind. Surfaces warmed enough near treeline primarily on steep slopes near rock outcroppings that produced mall point releases. Otherwise, no signs of instability were observed. Surfaces persist on north.

- March 20 - Increasing clouds and southerly wind. Soupy, warm snow on all aspects and elevations near Castle Lake. Observed a few small partial cornice falls that did not entrain much of any snow.
- March 21 - Warm. Windy and partly cloudy. No notables.
- March 22- Storm kicking in mid-day. About 2-3 inches by close of business. About 10-12 inches total by morning of 23rd. Warm storm, snow levels near 5500-6k ft. Temps cooling. Another wave of snow for the 23rd. Southerly flow. Wet snow.
- March 23 - 10 inches day before, 3-4 through the day. Snow level reached as low as 3,500 feet for a second, but mostly accumulated above 4,500 feet or 5,000 feet. Dense snow, right side up snow structure. Skies were obscured all day. Winds were light to moderate out of the southwest.
- March 24 - Skies cleared quickly. Wind shifts to northwest. Upper mountain was exposed to sun the majority of the day. Wet loose avalanches on SE aspect of Casaval, and out of Trinity Chutes. Roller balls and pinwheels on most solar slopes. Roller balls on Gray Butte nw face. Wind slabs still exist on the upper mountain. A D2 sized avalanche could definitely be triggered up there
- March 25 - Warming continues. Calm winds and variable cloud cover. Roller balls and dampening snow surfaces were observed on southerly aspects. Otherwise, no signs of instability were seen or had.
- March 26 - Crusty surfaces! A solid overnight freeze created crusty surfaces on south and west aspects. Warming occurred on east and south with no wet-loose instabilities observed. Winds blow light to moderate out of the west. Clear skies gradually become overcast.
- March 27 - Storm day! 6-10 inches of dry snow fell throughout the forecast region. Moderate to strong south and west winds blew and drifted snow near and above. Small drifts and surface instabilities were observed, Paul M. triggered a wind slab at Castle Lake off Middle Peak above the Pinner Chute.. Temps are keeping the snow dry available for transport. It's likely large sensitive drifts have formed in specific locations.
- March 28 - Obscured skies, light to moderate wind out of the west, couple inches of new snow at best. Lingering showers, but struggling to accumulate. Loose sluffs on GB, wind slab triggered at Castle yesterday. Lingering snow showers today and tomorrow, then clearing. The 7-10 inches of new snow is bonding well to old. Areas where wind and fresh snow combined represent the greatest hazard.
- March 29: Lingering snow showers, cloudy skies, breezy over higher terrain. Couple more inches of snow; obs limited in the alpine due to poor viz. Snow behaving well overall, though plenty blowing around. Sam went to Eddy's, Nick on south side to Bunny. Clearing today, sunny tomorrow. About 1-2 feet of snow since the 27th
- March 30 - Snow showers continued through the morning, then stopped by midafternoon. 24 inches of new snow (since 3/27) measured on the south side. Another 5-6 inches fell overnight. High pressure began to set in, with winds shifting to the north.
- March 31 - High pressure. Full sun, with northerly wind keeping upper mountain zones cool. Terrain BTL became quite soft and wet. Triggered a small wet loose on a SE aspect and 6,000 feet. Eric and sam completed the Grey rocks snow survey. Deepest core 150 inches
- April 1 - Warming continues. Small point releases and roller balls observed near treeline. Northeast winds hammered high elevation terrain, but decreased in speed into the late afternoon.
- April 2 - **Warmest day yet!** 60+ degrees near treeline. Skier triggered wet loose avalanches were easy to initiate on steep convex terrain. A natural occurred on the (pyramid) Eddy face.
- April 3 - Wet snow surfaces up to 8,200 feet, one to three cm thick surface crust above. Storm arrived in the late afternoon with thunder and brief periods of snowfall down to ~6,000 feet. One old loose wet avalanche observed on a west aspect of Yellow Butte.
- April 4 - About an inch of new snow. Temperatures below freezing across the forecast area. Obscured skies and light to moderate SW wind. No recent avalanches or other signs of instability.
- April 5 - A mix of snow flurries, sun, and clouds. Calm wind for most of day, northwesterlies picked up mid afternoon. 2-4 inches new snow on top of crusty surfaces. Skiing not great. No red flags of avy danger. Corn harvest yet to commence. Spring will be springing next week with big warm up expected. One more small storm tonight to bring an inch or two of new snow. One more week of forecasts!
- April 6 - Partly cloudy. Strong cloud layer between 8,000 and 10,000. Snow flurries at times, but no accumulations. Cold temps, terrible dust on crust ski conditions all over. Light wind across all elevation bands
- April 7 - Partly cloudy. Precip off and on through the day, with maybe an inch accumulation. Graupel and snow. Calm to light wind.

- April 8 - Sunny skies with a strong NW wind pluming snow off ridgelines on the upper mountain. Soft snow on most slopes and on all elevations. Ridgelines are the exception, being mostly firm or scoured. No alarming signs of wet loose snow instabilities.
- April 9 - Nice weather. Lots of signs of warming including roller balls, point releases, and two small wet slides below Powder Bowl. Primarily on south aspects.
- April 10 - Eric witnessed wet loose slide off of Casaval Ridge and Cory saw several at Castle Lake. Warm and dry with light to moderate northerly wind. Freezing levels up to 10,500 feet and ski bowl, gray butte, castle, eddy weather stations have not dipped below freezing since early Sunday morning.
- April 11 - Similar weather to yesterday. Hot and sunny, though with increasing afternoon clouds. No new wet loose instability today. Winds shifted from NE to S
- April 12 -
- April 13 - Cloudy, foggy, incoming storm. Underperforming so far. Moist snow, SE flow. Weather forecast calling for feet of snow, so far only a few inches. Existing snowpack stable, focus on new snow accumulation
- April 14 - The snow finally arrived. 9 at Eddy, 4 at OSB, and 8 at Castle overnight.