

# 2018-19 Annual Report



## Shasta/Trinity National Forest MOUNT SHASTA AVALANCHE CENTER



## Sponsors



## **Reported by:**

Nick Meyers  
Director/Lead Avalanche Forecaster

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# Mount Shasta Avalanche Center

## *Season Summary*

The Forest Service Mount Shasta Avalanche Center just finished its 21<sup>th</sup> season of operation. The 2018-19 winter is being remembered by what a winter should be: heaps of powder skiing, large avalanche cycles, icy roads, frozen fingers and a lot of shoveling! While wet season (October through April) precipitation finished off just above normal, it felt better than that in comparison to recent, poor winters past. During the wet season, Mount Shasta City received 38.75 inches of water which is 101% of the historic average of 38.09 inches. Our season had a late start with December receiving 3.68 inches of water, 47% of the historic average of 7.85 inches. A banner February got us back on track with 15.60 inches of water, 216% of average. By March, the snow banks at Bunny Flat were the tourist attraction in and of themselves, soaring 20+ feet high. The Old Ski Bowl snow depth sensor is 20 feet off the ground and it almost became buried at times. The mountain is completely plastered and will most certainly provide for a good spring skiing and climbing season.

For the 3<sup>rd</sup> season in a row, the MSAC had 3 full-time employees. Nick Meyers returned for his 10<sup>th</sup> season as the director, lead forecaster, ranger. Aaron Beverly worked his 3<sup>rd</sup> season as a forecaster, observer, ranger and website/weather station technician. A new addition, Ryan Sorenson worked his rookie season as an avalanche forecaster and ranger. The USFS funds Nick and Ryan's wages, while the Friends of the Mount Shasta Avalanche cuts Aaron's checks.

A banner year for the backcountry community in Mount Shasta kept the stoke high. It was a busy one for the MSAC with nearly constant snow removal, field observations, daily forecasts, community outreach and education, Friends group fundraisers/events and some sleep in there somewhere. Avalanches were a common occurrence including the notable Valentine's Day avalanche. We are happy to report zero avalanche fatalities within the forecast area this past winter. A few skiers were caught and carried in avalanches, but none buried or injured.

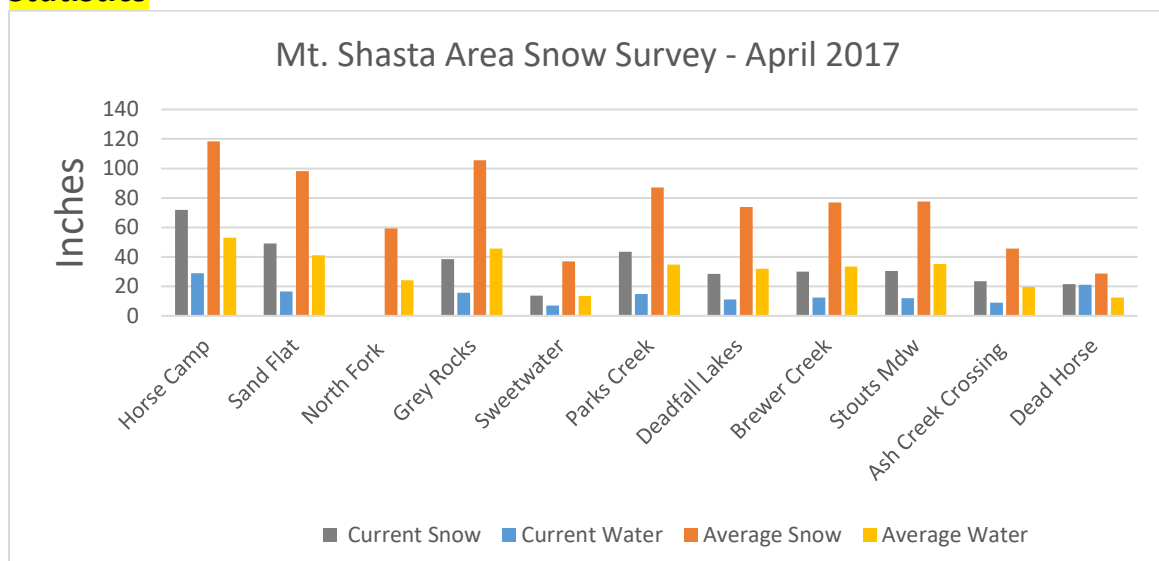
Avalanche education, outreach events and several projects kept us busy. MSAC staff delivered 18 various avalanche awareness and/or companion rescue presentations reaching 527 people in California and southern Oregon. Our 7<sup>th</sup> Annual Snowmobile Avalanche Workshop took place again up in the Old Ski Bowl. A movie night attracted nearly sold out crowds and Lel Tone's slideshow presentation attracted a nice group of folks. The annual Snowball event raised record numbers and was an incredibly fun time. Smokey the Groove played 3 sets and truly raised the roof of the aging city park building. We are also seeing growth each year with our fun and increasingly competitive Shasta Ascension backcountry ski and splitboard race. Heavy hitters from out of town have been giving locals a run for their money.

The MSAC website continues to receive minor tweaks and fixes. Several updates and new features were added. A noteworthy addition is a new table that presents forecasted AND observed weather station information. This new table will allow us to compare statistics for better and more accurate forecasting. Aaron drives the website work and we are lucky to have him for this.

The MSAC continues their volunteer snowmobile ambassador program as well. These hand selected riders from within the community strive to foster positive relationships at busy multi-use trailheads as well as share information about riding boundaries, avalanche information and safe riding etiquette while in the field. They also help with snow removal and trailhead facility maintenance.

The Friends of the Mount Shasta Avalanche Center is essential to our operations, and its members coordinate several events and fundraisers throughout the season. We could not do our work without them, and we extend a huge thank you for their support.

## Statistics



<b><u>Sacramento, Shasta and Trinity Watersheds*</u></b>								
<b>Course</b>	<b>Elevation(ft)</b>	<b>Last Month Snow(in)</b>	<b>2018 Snow(in)</b>	<b>2018 Water(in)</b>	<b>2017 Snow(in)</b>	<b>2017 Water(in)</b>	<b>Hist. Average Snow(in)</b>	<b>Hist. Average Water(in)</b>
Horse Camp	7900	57.9	72	29	172	73.5	118.3	53.1
Sand Flat	6800	21.8	49	16.5	110	42	98.1	41
North Fork	6900	N/S	N/S	N/S	57.5	21.5	59.2	24.2
Grey Rocks	6200	N/S	38.4	15.6	108	42	105.4	45.6
Sweetwater	5850	18.3	13.8	6.9	41.5	17	36.9	13.6
Parks Creek	6700	28.6	43.5	14.8	95	38.5	87.2	34.8
Deadfall Lakes	7200	28.5	28.5	11	70.5	34.5	73.9	32
			<b>2018 Snow(in)</b>	<b>2018 Water(in)</b>	<b>2017 Snow(in)</b>	<b>2017 Water(in)</b>	<b>Hist. Average Snow(in)</b>	<b>Hist. Average Water(in)</b>
<b>Averages of Courses Sampled</b>			41	15.6	93.50	38.4	82.7	34.9
<b>Percent (%) of Historic Average</b>			<b>49</b>	<b>45</b>	<b>113</b>	<b>110</b>		

### **Website/Social Media/Email**

2018-19 Number of MSAC Avalanche Advisories: 135

Number of Unique Website Users: 290,157

Total Number of Website Visits: 357,339

Average Session Duration: 2 minutes 25 seconds

Number of Facebook Followers: 5,593

Number of Instagram Followers: 1,844

Number of advisory email subscribers: 184

### **Education**

Number of People Reached: 588

Number of Presentations Delivered: 22

### **Avalanches 2018-19 Season**

Number of National Avalanche Fatalities: 25

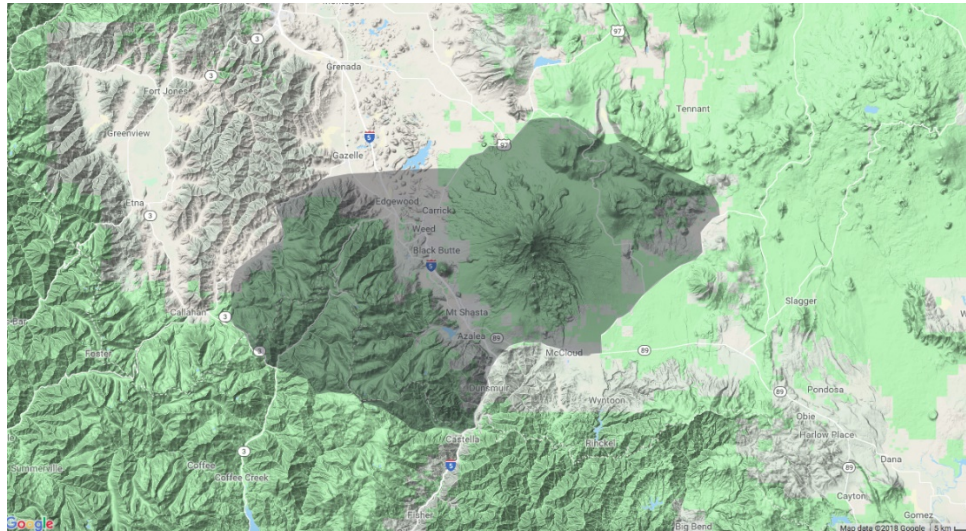
Number of Fatalities in the MSAC Advisory Area: 0

Number of people caught in avalanches in the MSAC Advisory Area: 2

## ***Avalanche Advisories***

The primary goal of the MSAC staff is to communicate current avalanche, snowpack and mountain weather information through our avalanche advisories. The 2018-19 season was the third year in a row we were able to issue daily advisories. A total of 134 advisories were published between December 1, 2018 and April 15, 2019 on our website [www.shastaavalanche.org](http://www.shastaavalanche.org).

### MSAC's 800 Square Mile Advisory Area



In order to convey the most accurate message to the public, it is critical to get out into the backcountry regularly to gather current information on conditions. Days began early for us to be able to publish the advisory by 7am and were followed by field outings on skis and snowmobiles in our 800 square mile advisory area

### Avalanche Danger Ratings 2017-18 Season

Overall Avalanche Danger Rating	LOW	MODERATE	CONSIDERABLE	HIGH	EXTREME
Number of Days Issued	58	38	31	6	0

### ***Avalanche Incidents***

Fortunately, no avalanche fatalities occurred in our advisory area during the 2018-19 season. In the U.S., there were 25 avalanche fatalities this winter which is near the national average of 27.

This avalanche season had some impressively large avalanches to report. There were 5 documented reports of human triggered avalanches up to destructive size 2. The MSAC staff documented 23 total avalanches. Avalanche Gulch hosted two D4 size avalanches, the first of which was estimated to have happened early on Valentine's Day. This impressive slab avalanche ran over 3 miles and approximately 5,000 vertical feet. Another smaller, but still rather large avalanche ran a similar path estimated to have



released on the evening of April, 7<sup>th</sup>. There were two more D3 avalanches observed by the MSAC staff; a hard wind slab off Left Peak that put many broken trees into Castle Lake; and a large wet slab that happened along the road cut near Bunny Flat trail head. There was 12 reported D2 avalanches and 6 reported D1 sized avalanches.



02/27/2019 SS-NS-R4-D4 Left Peak, Castle Lake - 02/14/2019 HS-NS-R4-D4-U Avy Gulch, Mount Shasta

## ***Avalanche Education***

The Mount Shasta Avalanche center delivered 22 avalanche presentations this season reaching 578 people throughout northern California and southern Oregon. The MSAC provided free avalanche awareness and companion rescue clinics the first Friday and Saturday of December, January, February and March. These clinics were held in the Shasta Mountain Guides' store front and at Bunny Flat trailhead and were open to the public. Similar presentations were given in Medford, Oregon. We also held our seventh annual Snowmobile Avalanche Workshop in Mount Shasta. In addition, avalanche awareness presentations were given to local school groups from Weed and Yreka. Avalanche trainings were also provided to Forest Service employees.

<b>Date</b>	<b>Speaker</b>	<b>Group/Topic</b>	<b>Participants</b>
10/2018	Meyers/Malee (FMSAC)	California Avalanche Workshop	200+
12/7/18	Meyers/Sorenson	Mount Shasta Avalanche Awareness	25
12/8/18	Meyers/Sorenson	Mount Shasta Companion Rescue	20
12/13/18	Meyers	Medford REI Avalanche Awareness	10
1/4/19	Meyers/Sorenson	Mount Shasta Avalanche Awareness	21
1/5/19	Meyers/Sorenson	Mount Shasta Companion Rescue	15
1/8/19	Meyers	Rogue Snowmobile Club Avalanche Awareness	41
1/12/19	Meyers/Sorenson/Beverly	MSAC Snowmobile Avalanche Workshop	3
1/24/19	Beverly	Headwaters Outdoor School Avy Awareness	10
1/31/19	Beverly	Nordic Center kids avalanche awareness	19
2/2/19	Meyers	Mount Shasta Avalanche Awareness	12
2/3/19	Meyers/Sorenson	Mount Shasta Companion Rescue	12
2/22/19	Beverly	Nordic Center kids avalanche awareness	20
3/1/19	Meyers/Sorenson	Mount Shasta Avalanche Awareness	8
3/2/19	Meyers/Sorenson	Mount Shasta Companion Rescue	7
3/7/19	Sorenson	USFS Snow Survey Crew avalanche awareness/Rescue	40
3/9/19	Beverly	Weed Elementary School Avalanche Awareness	20
3/9/19	Sorenson	Southern Oregon University group – AA	15
3/15/19	Beverly	Weed High School Avalanche Awareness	20
3/14/19	Beverly	Nordic Center kids avalanche awareness	20
3/21/19	Beverly	Nordic Center kids avalanche awareness	20
3/22/19	Meyers	Nordic Center kids avalanche awareness	20



### ***Finances of the MSAC***

The Shasta Trinity National Forest funded xx% of the MSAC's total operating costs for the 2018-19 season. The MSAC was awarded a CA state OHV grant (other agency cash) that provided xx% of the total cost for this season, and the FMSAC funded xx%.

Shasta Trinity National Forest Service cash	\$xx,xxx
Shasta Trinity National Forest Service in-kind	\$x,xxx
Other Agency Cash	\$xx,xxx
Friends of the Mount Shasta Avalanche Center cash	\$xx,xxx

Total - \$xx,xxx

### ***Friends of the Avalanche Center***

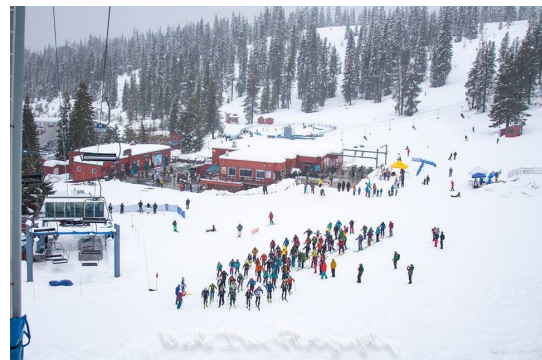
The friends group is a nonprofit that was created in 2002, and is an essential component of the Avalanche Center. FMSAC funds Aaron Beverly's position as a forecaster, web tech and professional observer. The Friends fund and operate the MSAC website and all our remote weather stations. They also organize all fundraising events, and help with the education and outreach components of the avalanche center.

FMSAC is a volunteer group with one paid position, the Executive Director, Justi Hansen. FMSAC members include Hanne Meyers, Sean Malee, Stacia Anderson, Dave Brown, Jason Coster, Molly Breitmun, Nick Joslin, and Brian McCall, Clayton Coles and Nate Parker.

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 of their effort and support this season.



**FMSAC Snowmobile Ambassador Program**



*01/26/19 The Backcountry Ascension Race*

## ***Snowpack, Weather and Avalanche Summary***

The season began with a series of winter storms on Thanksgiving. After the hype wore off, a dry outlook plagued early December. December is typically the wettest month of our winter and a critical time for seasonal snowpack formation. This season Mount Shasta City recorded 3.68 inches of precipitation for December, well below the 10-year average of 7.89 inches. On December 14, a storm brought rain up to 10,000 ft. This formed a thick crust that would remain at the snow surface through December. This icy crust may have been a bed surface for large avalanches observed later in the season.



*12/10/2018 Thin coverage in Avalanche Gulch    12/25/17 Rain Crust from Dec 14<sup>th</sup> still existed at surface*

A few cold storms around Christmas time rejuvenated some energy for the snow loving community around Mount Shasta, but it wasn't until the week of January 7th when a large storm brought nearly seven inches of water and 26 inches of snow at Old Ski Bowl. This set the stage as storms lined up in the pacific for the rest of the season.

Snow levels ranged from which improved coverage in upper elevation terrain on Mount Shasta, but rain below continued to delay snowpack formation in all other advisory area zones. A potent storm on January 26-28 delivered 23 inches of snow with 1.8 inches SWE. The storm was accompanied by several days of strong westerly winds. Immediately following this late January storm, we experienced the most avalanche activity of the season with natural and human triggered wind slab avalanches occurring on easterly aspects above treeline.