

# 2010-2011 Annual Report



## 2010-2011 Annual Report

The winter of 2010 - 2011 marked another highpoint in the avalanche center's history. The Board of Directors raised more money than ever before, the Forest Service contributed more than ever before, two permanent positions were approved, and use of the advisory as well as other products reached an all time high. The Sierra Avalanche Center continues to function as a partnership between the Tahoe National Forest and a volunteer Board of Directors with 501(c)(3) not for profit organization status. This relationship continues to strengthen both operationally and financially while continuing to gain community support.

Some of the accomplishments from this past season include:

- The Board of Directors successfully raised more than \$120,000 to support the Sierra Avalanche Center's operating budget.
- The Tahoe National Forest provided \$12,575 in infrastructure support.
- The USDA Forest Service provided \$39,522 for forecaster salaries in the form of
- \$19,022 from the LTBMU, \$15,000 from Region 5 and \$5,500 from Region 4.
- The SAC website was accessed over 500,000 times by more than 70,000 people from July 15<sup>st</sup> through April 23<sup>th</sup> representing a 45% increase over last year.
- A new record of 8,615 page loads in a single day was set on March 25, 2011.
- The Sierra Avalanche Center issued 156 daily avalanche advisories and two early season snow condition reports.

• The Sierra Avalanche Center implemented new social media services including a Facebook page (434,000 views), Twitter page, email subscription service, rss-feeds, and text alerts.

• The forecasters continued to strengthen their working relationship with the National Weather Service in Reno, local ski patrols, and other professional organizations.

- The Board of Directors organized and hosted a much appreciated and highly successful professional development workshop for professional avalanche workers in the forecast area.
- The Board of Directors and Tahoe National Forest worked together to get two permanent forecasting positions approved.

We would like to extend our gratitude to everyone who has put forth time and effort to support the Sierra Avalanche Center.

Brandon Schwartz and Andy Anderson Forecasters Sierra Avalanche Center Tahoe National Forest

## Advisories

From November 19st through April 23th, the Sierra Avalanche Center issued 156 daily avalanche advisories. The number of advisories issued for each danger level was 34 Low, 84 Moderate, 30 Considerable, 6 High, and 1 Extreme. Additionally, 2 early season snow condition reports were posted from October 19th through November 18th.

Advisories were available 24 hours a day, 7 seven days per week on the web and by phone. The advisory web page was loaded more than 500,000 times this past winter. During the forecasting season from November 19th to April 23th, the website was viewed an average of 3,200 times per day with a record single day maximum of 8,615 page loads occurring on March 25th. The recorded phone message was accessed over 3,000 times. The total number of page loads increased by approximately 45% compared to last winter. An online archive of advisories can be found at: http://www.sierraavalanchecenter.org/archive.



Brandon Schwartz investgating an avalanche near Blue Lakes

## **Advisory Area**

The advisory area of the Sierra Avalanche Center covers approximately 1,500 square miles of the Central Sierra Nevada Mountains of California and Nevada. The advisory area is bound by Hwy 49 Yuba Pass on the north and Hwy 4 Ebbetts Pass on the south. The advisory covers the avalanche terrain along the Sierra Crest and extends to the eastern slope of the Sierra Nevada. Two inroads to the west side of the Sierra Crest exist within in the advisory area at Carson Pass and at Ebbetts Pass, in order to include the backcountry terrain surrounding the established boundaries of the Kirkwood and Bear Valley ski areas.



## Map of the Sierra Avalanche Center forecast area.

## Example Advisory published on Feb. 27, 2011

This advisory was posted on 2011-02-27 and covers the Central Sierra Nevada Mountains between Yuba Pass on the north and Ebbetts Pass on the south. This advisory applies only to backcountry areas outside established ski area boundaries. This advisory describes general avalanche conditions and local variations always occur. The information in this advisory is provided by the USDA Forest Service who is solely responsible for its content.

#### Advisory for 2011-02-27 (THIS IS NOT THE CURRENT ADVISORY!):



#### Torecast Discussion

A high pressure has started to form over the region. This ridge should bring warmer temperatures and clear skies to the forecast area. Daytime highs today should climb into the upper 20's and low 30's above 7000 ft. As the ridge establishes itself the wind should shift back to the west and southwest this afternoon. These winds should begin to increase over the next 36 hours due to another low pressure moving into the Pacific Northwest. This low may start to push some clouds into the area tomorrow; however, most of the mositure associated with this low should remain north of the region.

#### Observations:

Yesterday observations in the Mt. Rose backcoutry and on Hidden Peak show significant settlement within the storm snow. Handpits on Hidden Peak showed that the density change (lighter snow under heavier snow) still existed; however, stability tests, ski cuts, and comice cuts did not produce any failures on this layer (photos, video). In the Mt Rose backcountry near a skier-triggered slide that occurred on Friday this interface also still exists. Stability tests in this area showed that fractures along this interface remain possible. The tests also showed that these fractures should be more difficult to trigger today (pit profile, photos).

Another natural avalanche that occurred near the end of the storm on Friday was also reported on Anderson Peak. This slide looked large and may have entrained all of the new snow as well as stepping down into some of the older snow (photos more info).

#### Avalanche Concern #1: Wind Slabs and Deep Slabs

Wind slabs that formed during the recent storm still exist on the wind-loaded NW-N-NE-E-SE aspects. In many areas the bonds between these slabs and the snow below them have strengthened enough to hold the wind slabs in place. However this strengthening has not occurred everywhere. Some of these slabs will remain sensitive to human-triggering today. On the wind-loaded N-NE-E and cross loaded NW and SE aspects pockets of fragile wind slabs should still linger. These pockets will most likely exist in near and above treeline terrain. Even though these slabs may be more difficult to trigger today, avalanches resulting from failure of these slabs could be large, deep, and destructive and could step down into older snow causing deep slab avalanches. Larger triggers like large cornices or multiple people on a slope will have better chances of causing avalanche activity.

#### Avalanche Concern #2: Rapid Warming

With lots of sunshine and daytime highs 10 degrees above yesterday's forecasted for today, the snowpack will experience some rapid warming. This rapid warming will cause rapid changes in the upper layers of the snowpack including decreased strength of the bonds holding the layers together and increased deformation in the layers. These rapid changes may occur too fast for the snowpack to adjust to them and stay in place. As the snowpack weakens due to today's rapid warming human-triggered avalanches will become possible on the sun exposed aspects where the most warming occurs. Most of these instabilities should manifest as point release avalanches and surface instabilities like roller balls; however, some slab avalanche activity will be possible as well. If slab avalanches do occur they could be large, deep and dangerous. The mid to lower elevation SE-S-SW aspects will hold the best potential for these kinds of slides with pockets of these instabilities existing on other less sun-exposed aspects and on higher elevation sun-exposed aspects.

#### The bottom line:

Near and above treeline, pockets of MODERATE avalanche danger will exist on all aspects, 35 degrees and steeper. Below treeline, avalanche danger is MODERATE on SE-S-SW aspects with pockets of MODERATE danger on E and W aspects, 35 degrees and steeper. Deep and destructive human triggered avalanches remain possible.

Andy Anderson - Avalanche Forecaster, Tahoe National Forest

#### Central Sierra Weather Observations for 2011-02-27:

0600 temperature at Sierra Crest (8,700 feet):

Max. temperature at Sierra Crest past 24 hours:	12-22 deg. F.
Average wind direction at Sierra Crest past 24 hours:	Northeast
Average wind speed at Sierra Crest past 24 hours:	15 mph
Maximum wind gust at Sierra Crest past 24 hours:	32 mph
New snowfall at 8,200 feet past 24 hours:	0 inches
Total snow depth at 8,200 feet:	94-139 inches
2 Day Mountain Weather Forecast starting 2011-02-27:	

For 7000-8000 ft
Overnight:

2011-02-27:		Overnight:	The next day:	
Weather:	Sunny	Mostly clear	Mostly sunny with some occasional thin high clouds	
Temperatures:	28-34 deg. F.	13-19 deg. F.	26-31 deg. F.	
Wind direction:	West	Southwest	Southwest	
Wind speed:	Light increasing to 10-15 mph in the afternoon	10-20 mph with gusts to 35 mph	10-20 mph increasing to 15-25 with gusts gusts to 45 mph in the afternoon	
Expected snowfall:	0 in.	0 in.	0 in.	

	F	or 8000-9000 ft:	
	2011-02-27:	Overnight:	The next day:
Weather:	Sunny	Mostly clear	Mostly sunny with some occasional thin high clouds
Temperatures:	24-29 deg. F.	15-20 deg. F.	21-26 deg. F.
Wind direction:	North shifting to the west in the afternoon	Southwest	Southwest
Wind speed:	10-20 mph with gusts to 35 mph increasing to 15-25 mph with gusts to 45 mph in the afternoon	15-30 mph with gusts to 60 mph	20-35 mph with gusts to 60 mph
Expected snowfall:	0 in.	0 in.	0 in.

## **Field Observations**

The avalanche center's formal program of avalanche, snowpack, and weather information gathering improved again season. The number of observations submitted by the public through the online submittal form to the website during 2010-2011 continued to increase. These additional observations from the general public were used to increase the number of observations used in creating the daily avalanche advisories. Public feedback on the quality of the advisories was very positive.

Alpine Meadows, Central Sierra Snow Laboratory, Heavenly, Kirkwood, Mt. Rose, Squaw Valley, Bear Valley, and Sugar Bowl submitted observations to the avalanche center on storm mornings with afternoon updates often submitted. Mountain Adventures Seminars, a guide service in Bear Valley, CA also shared its field observations with the avalanche center. This information, combined with observations submitted by the public, was an important supplement to the information gathered by the SAC team. As part of that team, forecasters Brandon Schwartz and Andy Anderson made observations 7 days a week during the winter season. Professional observers Steve Reynaud and Travis Feist each made an average of 4 observations per week during the winter season.

The Board of Directors worked with Thin Air Motorsports to establish sponsorship of the avalanche center by Polaris Industries. Two brand new 2010 Polaris 800 Dragon RMK 164 snowmobiles were loaned to the avalanche center for the entire operating season. With these snowmobiles, the forecasters were able to make observations in high snowmobile use portions of the forecast area that are difficult to access on skis alone in a single day. These snowmobiles were also used to travel a cross country route between Carson Pass and Ebbetts Pass, allowing the forecasters to make field observations in both areas in a single day.



John Swanson shopping for a Christmas tree.

### 2010-2011 Snowpack, Storm and Avalanche Summary

The winter of 2010-2011 began with a bang with record rainfall in October followed by record snowfall in November and December. The January 1st snow survey for the Sierra Nevada came in at 198%. A 6 week dry spell occurred January through mid February followed by more record snowfall through March. The April 1st snow survey for the Sierra Nevada came in at 173%. For most portions of the forecast area this was most snowfall on record since the winter of 1950-1951. With record early season snowfall the snowpack took on mid winter characteristics by mid December. Numerous avalanches cycles occurred with large avalanches occurring during both periods of rapid loading and rapid warming. Large avalanches occurred in avalanche paths that had not been active in many years. For more details and a month by month breakdown of the winter snow and avalanche activity please see the table below.

November 1	9 - November 30				
Total Snowfall	Number of Storms	Dates of Storms	Storm Snowfall	Dates of Avalanche Cycles	<b>Reported burials</b>
71.5	2	11/20-11/24	58	11/21-11/23	
		11/28	1	11/27-11/30	11/27 Caples Lake 11/28 Red Lake Peak with injuries
December					
Total Snowfall	Number of Storms	Dates of Storms	Storm Snowfall	Dates of Avalanche Cycles	Reported burials
125	6	12/3-12/7	20	12/3	
		12/9-12/10	3	12/6	12/6- Jakes
		12/14-12/15	17	12/14-12/17	12/17 - Tahoe Donner on SH
		12/17-12/23	55	12/19-12/20	
		12/26-12/27	7	12/23-12/26	
		12/29-12/30	24	12/29	
January					
Total Snowfall	Number of Storms	Dates of Storms	Storm Snowfall	Dates of Avalanche Cycles	Reported burials
32	4	1/1-1/3	16	1/1	
		1/12	3	1/12	
		1/14	4	1/16	
		1/30-1/31	10	1/30	

February			0		Descente di la sul a la
Total Snowfall	Number of Storms	Dates of Storms	Storm Snowfall	Dates of Avalanche Cycles	Reported burials
117	2	2/15-2/20	87	2/16-2/22	2/20 Whites Creek - Mt Rose 2/21 Blues Lakes snowmobile
		2/25-2/26	30	2/25	
				2/27	2/27 - Ralston
March					
Total Snowfall	Number of Storms	Dates of Storms	Storm Snowfall	Dates of Avalanche Cycles	Reported burials
177	5	3/2-3/3	12	3/3-3/8	
		3/6-3/8	17		3/5 - North side of Castle 3/7 - Emerald Bay Chutes
		3/11	3		
		3/14-3/17	33	3/16-3/17	3/17 Slab cliffs near Fireplug 3/22 Fireplug with injuries 3/24-3/25 One car on hwy 89, 2 trains Ciaco Butto and
		3/19-3/28	112	3/19-3/28	2 trains Cisco Butte and Shallenberger 3/28 - Frog Lake near Carson Pass
April 1 - April 23					
Total Snowfall	Number of Storms	Dates of Storms	Storm Snowfall	Dates of Avalanche Cycles	<b>Reported burials</b>
30	6	4/3	1	4/1	4/1 Car at Emerald Bay
		4/7-4/9	12	4/9-4/10	
		4/14	4		
		4/16	1		
		4/18-4/19	5	4/19	
		4/21-4/23	7		



Average Air Tempertures, 24 hr Snowfall, and Snow Depth Across the Forecast Area

## **Board of Directors**

The Sierra Avalanche Center operates as a partnership between a Board of Directors with 501(3)(c) not-for-profit status and the Tahoe National Forest. The mission of the Sierra Avalanche Center includes disseminating current snowpack stability information to the general public; providing educational information, knowledge, and understanding of avalanches to recreational users and groups; and facilitating communication in the region to reduce the impact of avalanches on recreation, industry, and transportation. The Board of Directors includes Justin Broglio (CEO), Bob Moore (Secretary), Randall Osterhuber (CFO), Dave Beck, Larry Heywood, Jeremy Jacobson, Chip Morill, Jason Oelkers, Todd Offenbacher, Dave Paradysz, and John Swanson. The Advisory Committee to the Board of Directors includes: Cameron Bordner (Legal Advisor), Debby Broback, Phil Caterino, Jen Lees, and Don Triplat.

The Board of Directors is the financial backbone of the Sierra Avalanche Center. Through soliciting donations from the public and organizing/marketing fund raising events, they are a major source of funding for the Sierra Avalanche Center. Money raised by the Board of Directors covered approximately 65% of the operational costs for the Avalanche Center in 2010/2011. In past seasons, Board of Directors contributions have accounted for up to 95% of the avalanche center's annual operating costs when less USDAFS money was contributed. Through a collection agreement with the Tahoe National Forest, these funds pay for forecaster salaries and the costs of professional level continuing education. Additionally, the Board of Directors provides compensation for contracted professional observers and some equipment needs for the forecasters. The Board of Directors also put on a highly successful and well appreciated professional development workshop for the the professional avalanche workers in the area this year.



Illustration 1: Don Triplat taking his SAC hat for stroll in the mountains

## **Financial Summary**

The Board of Directors successfully raised \$119,166 from the local community this season. These funds were used to pay 65% of the operating costs of the avalanche center including \$11,171 towards salaries for two Tahoe National Forest avalanche forecasters and \$48,112 for two contracted professional field observers. The Board of Directors of the Sierra Avalanche Center raised funds for the season through several different avenues including private donations, online donations, resort donations for the SAC Ski/Ride Days, advertising, and fund raising parties/movie premiers. A complete itemized budget of Sierra Avalanche Center expenditures is listed below. The remaining 35% of this year's operating funds were government contributions in the form of \$6,847 in infrastructure support from the Tahoe National Forest, \$15,000 in salary funding from USDA Forest Service Region 5, \$5,500 in salary funding from USDA Forest Service Region 4, and \$19,022 in salary funding from the Lake Tahoe Basin Management Unit.

The "Ski Days" continue to serve as the primary fund raising events for the Sierra Avalanche Center. The Board of Directors used their connections in the Tahoe ski industry to partner with seven ski resorts for these Ski Days. Each resort donated between 150 and 500 lift tickets for a specific day. The Board of Directors set a fixed public donation amount necessary to receive a lift ticket for the Ski Day as a thank you gift.

Backcountry ski gear was donated by Backcountry Access, The North Face, Marmot, Patagonia and Voile USA and used as raffle prizes throughout the season. Several local organizations made cash donations to the avalanche center. The El Dorado Nordic Ski Patrol, Gotit! Real Estate and Development Corp., Mountain Adventure Seminars, Tahoe Adventure Film Festival, Tahoe Nordic Search and Rescue, Care Flight, TGR, The Echo Lakes Splitfest, The Rahvles Bonzai Tour, The Divided Sky, Bar of America, Squaw, and the Heavenly Ski Patrol were all significant contributors. The Board of Directors encouraged donations from the general public via the website, by mail, or in person. The Board of Directors accepted cash, checks, and donations via credit card or electronic transfers through a PayPal donation link on our website. Through these avenues, the Board of Directors received \$41,597 in donations.

On a smaller scale, the Board of Directors raised awareness for each of the SAC Ski/Ride Days and the possibility of online donations through donated advertising received from local newspaper stories, radio and TV public service announcements, local utility bill mailers, and through several online communities (i.e. – forums and discount websites).

## Ski Resorts – SAC Ski/Ride Days Fundraisers – Details

- Alpine Meadows Ski Resort
  - Donated 200 adult all day lift tickets to be used by the Sierra Avalanche Center as fundraising incentives.
  - Funds raised \$6,300.00
- Bear Valley Mountain Resort
  - $\circ$   $\,$  Donated 200 adult all day lift tickets to be used by the Sierra Avalanche Center as fundraising incentives.
  - Funds raised \$2,120.00
- Heavenly Mountain Resort
  - Donated 200 adult all day lift tickets to be used by the Sierra Avalanche Center as fundraising incentives.
  - Funds raised \$8,800.00

- Kirkwood Mountain Resort
  - $\circ$  Donated 500 adult all day lift tickets to be used by the Sierra Avalanche Center as fundraising incentives.
  - Funds raised \$17,865.00
- Mt. Rose Ski Tahoe

• Donated 500 adult all day lift tickets to be used by the Sierra Avalanche Center as fundraising incentives.

• Funds raised - \$17,150.00

• Northstar-at-Tahoe

• Donated 300 adult all day lift tickets to be used by the Sierra Avalanche Center as fundraising incentives.

- Funds raised \$12,930.00
- Sugar Bowl Resort

• Donated 500 adult all day lift tickets to be used by the Sierra Avalanche Center as fundraising incentives.

• Funds raised - \$7,650.00

## Fundraising partners and the services they provided:

SnowBomb.com

• Primary e-ticketing partner. Donated their service to facilitate online lift ticket distribution for the SAC Ski/Ride Days. Through these services the Sierra Avalanche Center raised \$44,550.

Porters Tahoe

• Cash donation of \$2,000. Product donation of \$1,000 for giveaway during SAC Ski/Ride Day fundraisers.

Thin Air Motorsports and Polaris Industries

• Full season loan of two Polaris Dragon RMK 800cc 164" snowmobiles. Donated all cost of service labor incurred during operating season. Estimated product and services value \$24,000.

Backcountry Access

• Product sponsorship. Donated product for giveaway during SAC fundraisers. Estimated product value \$3,000.

KTKE 101.5 Truckee and Tahoe's Independent Radio

• Product sponsorship. Donated services to broadcast the avalanche advisory and to

advertise SAC fundraisers. Estimated product value \$3000.

The Real Graphic Source

Product sponsorship. Donated printing services to advertise SAC fundraisers.

Estimated product value \$500.

Resort Sports Network

• Product sponsorship. Donated advertising services to advertise SAC fundraisers. Estimated product value \$3000.

Voile-USA

• Product sponsorship. Donated product for giveaway during SAC fundraisers. Estimated product value \$3800.

TGR

• Provided movies and venues for movie night fund raisers.

Divided Sky

• Hosted a fund raising party and collected over \$1000 in donations. Bar of America

• Hosted a fund raising party and collected over \$1000 in donations. Echo Lakes Splitfest

• Hosted a raffle and collected over \$600 in donations. Care Flight

• Product sponsorship. Donated product for giveaway during SAC fundraisers. Estimated product value \$900.

Heavenly Professional Ski Patrol

• Pending cash donation from their annual fundraising party.

Squaw

• Provided venue and concessions for the SAC pro development workshop. Estimated value \$3000.



Jerermy Jacobson enjoying the Tahoe backcountry

## Sierra Avalanche Center Profit & Loss

September 1, 2010 through April 6, 2011

	Sep 1, '10 - Apr 6, 11
Ordinary Income/Expense	
Income	
Autumn fundraiser	4,011.00
CD Interest Earned	44.22
Donation	
Alpine Mdws lift ticket sales	6,300.00
Alpine Mdws Ski Day cash	25.00
Bear Valley lift ticket sales	2,120.00
Donation thru mail	27,974.47
Heavenly lift ticket sales	8,800.00
Kirkwood lift ticket sales	17,865.00
Mt. Rose Ski Day	17,150.00
Mt. Rose Ski Day cash	140.00
Northstar lift ticket sales	12,930.00
Online donation thru PayPal	10,333.48
Sugar Bowl lift ticket sales	7,650.00
Sugar Bowl Ski Day cash	533.55
Donation - Other	3,289.98
Total Donation	115,111.48
Total Income	119,166.70

Expense	
Advertising	13,900.00
Bank service charge	596.02
Business development	487.50
Chamber of Commerce	110.00
Field Observations	16,510.00
Forecaster equipment	1,000.00
Insurance	2,295.00
Non-profit status fee	
Tax status filing fee	
Tax preperation	684.90
Total Tax status filing fee	684.90
Non-profit status fee - Other	50.00
Total Non-profit status fee	734.90
Office Supplies	29.69
Payroll	46,942.00
Processing fee	1,027.00
SAC Logo wear	3,071.28
Snowmobile equipment	556.23
TD Chamber of Commerce	120.00
Website server fee	1,189.99
Total Expense	88,569.61

Extreme - Sponsors who donated more than \$3,000 to SAC





High - Sponsors who donated between \$1,000 and \$2,999 to SAC



Considerable - Sponsors who donated between \$500 and \$999 to SAC

















-				
Timothy Maly	Leo Szumel	Dean Bosche	Jamison Blair	Karl Marlowe
Timothy Pfafman	Matt Eastman	James Fox	Matt Ridge	Peter Loer
Mike Schwartz	Daniel Switlick	Cara Streit	Richard Winfield	Garth Alling
Steven Biczak	Susan Zanner	Esther Kim	Kimberly Woods	Scott Clark
Hugh Barron	Pierre Redmond	Marissa Muscat	Gregory Juhl	Richard Martin
Peter Czerpak	Bobbie Morrison	Clint Edwards	Mark Baier	Markus Mueller
Jacob Palmer	Peter Cornell	Joe Bittaker	Martin Washburn	Greg Johnson
Eric Schoonbaert	Mark Sutton	D. Valentine	James Powell	Bret Dezordo
Rob Wyatt	Derek Cissell	Julin Maloof	Matthew Wetter	Ross Dakin
Lukasz Lempart	Genti Cuni	Patrick Stuart	Eric Bervid	Carson Jeffres
Jeffrey Montgomery	Laning Andrews	Rod Georgiu	Thomas Springett	Derek Duff
Cynthia Lee	Gian Banares	Radomir Schmidt	Denis Gilbert	James Doucette
Huy Nguyen	Paul Wisheropp	Mike Matlock	Roderick Beaton	Derek Metzger
Jay Chung	Jim Sloves	Robert Spencer	Erin Rasmusson	John Morriss
Nicholas Damner	Neal Lischner	John Hovell	Vito Esposito	Julian Wixson
Robert Rowen	David Fiore	Scott Brown	Kent Ervin	Scott Bornheimer
Terry Spreiter	The North Face	Marmot	Kevin Clark	Susan Burt

## Moderate - Sponsors who donated between \$100 and \$499 to SAC

# Low - Sponsors who donated between \$20 and \$99 to SAC

Sam Christian	Jeff Glass	Peter Crosby	Brad Altman	Charles Harnden
Richard Whiting	Jeffrey Weaver	Raymond Bonneau	Jay Oshiro	Douglas Sherman
Paul Zimmerman	Jerry and Renee Hapgood	Konrad Motzek		