



# Northwest Weather and Avalanche Center

and

## Friends of NWAC



# 2013 Annual Report

**NWAC Mission:** The Northwest Weather and Avalanche Center promotes safety by helping reduce the impacts of avalanches and adverse mountain weather on recreation, industry and transportation in Washington, and northern Oregon through data collection, mountain weather and avalanche forecasting and education.

**FOAC Mission:** The mission of the Friends of the Northwest Weather and Avalanche Center is to ensure the financial viability of the Northwest Weather and Avalanche Center and to save lives through public education and awareness about avalanches and avalanche safety.

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## A Message from the NWAC Director

The 2012-2013 winter will go down in NWAC history not for the legendary snowpack or severe drought, but rather for featuring a slide of epic human proportions, one that eventually released after compiling more than three decades of winter experience and ran down the path to retirement. I am referring of course to the departure of long-time co-founder and director of NWAC, Mark Moore, who retired at the end of 2012 after 37 years at the helm. With Mark's huge ski boots to fill, I became NWAC's second director in the mid-season transition that also featured the addition of Dennis D'Amico as the first new forecaster since Garth Ferber was hired in 1993. Indeed, this has been a season of change at NWAC, and while Mark will be missed, we are moving forward with excitement at the possibilities ahead. In addition to the personnel changes, we made several other changes to the NWAC operation this season. The most significant was the addition of concern icons to the daily avalanche forecast along with text specifically addressing the concerns in the avalanche forecast. We hope

this fundamental change to the way the forecast is provided was well received. From the feedback we have received, it seems that it was. Other important operational changes for the 2012-2013 season included;

- Publishing the daily avalanche forecast at 6 pm the prior evening instead of mid-day.
- Extending the avalanche forecast out an additional day.
- Enabling users to upload avalanche and snowpack observations to the GIS map on the website.
- Eliminating the daily forecast phone recording and state summary avalanche forecasts.

We hope that all of these changes improved our forecasting service, and we are extremely grateful to all of the agencies, companies and individuals who have supported NWAC this winter and enabled us to continue to improve and offer a product that we hope is saving lives in the mountains.

Thank you,

Kenny Kramer

## A Message from the FOAC Executive Director

As I sit at my desk attempting to summarize the winter of 2012-13, I am struggling to find the right words. It wasn't an epic winter but it wasn't terrible either. We had our share of good powder days, but somehow I don't feel like we got enough. I guess it was...well...just "average".

From an avalanche standpoint, the winter of 2012-13 was average as well. We were holding our breath into the spring hoping for a year with no avalanche fatalities, but alas it was not meant to be, as we suffered two fatalities in April, as two snowshoers in separate parties were killed on Snoqualmie Pass following a late season storm

on April 13. These avoidable accidents were tragic and solidified our beliefs that we are moving in the right direction in our efforts to raise awareness about the avalanche hazard through educational and outreach programs. These programs could not happen without the support of the fantastic winter recreation community in the Northwest and companies in the outdoor industry throughout the country. We are extremely grateful for your support!

Thank you!

Benj Wadsworth

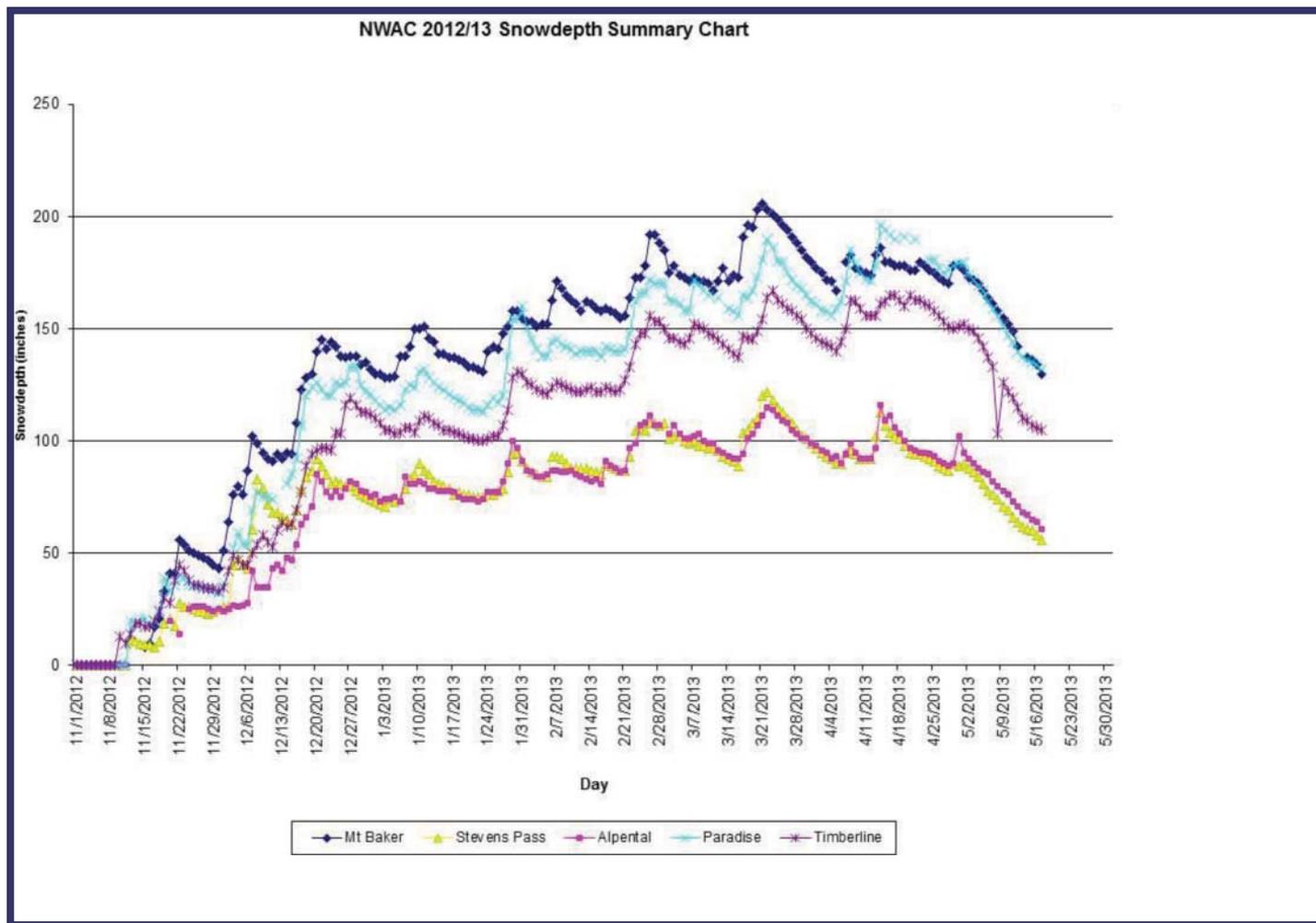


## 2012-13 Winter Weather Summary

While the winter of 2012-13 was not record breaking in any way, it also did not lack intrigue for those of us who follow the weather and monitor the snowpack. The following summary, while not exhaustive, provides a glimpse at what “average” really means in the PNW.

After a mild and somewhat dry start to November, with no snow at our stations through November 11, the season started with a bang as snow began to pile up on November 20. Mt Baker picked up a whopping 11 inches of water in 6 days with a cooling trend that resulted in about 4 ft. of snow in the second half of November, with other stations receiving 1-3 ft.

In December, the snow really started to fly. The long term prediction for an El Nino winter fell by the wayside as ENSO neutral conditions prevailed. A strong jet stream drove cool storms off the Pacific beginning early in December and kept the snowpack building rapidly through the month. After receiving 11 inches of water in the first week of December, Mt Baker surpassed 100” on December 8! Not to be outdone, Stevens Pass picked up over 5 ft. of low density snow in just 3 days the same week! Tree well/snow immersion suffocation (SIS) messages accompanied the avalanche forecast and the stormy, cool pattern lasted until Christmas Eve. The first avalanche warning of the year was issued on December 17 and deep, soft storm and wind slabs were reported throughout the forecast area. A relatively isolated pocket



of surface hoar in the Crystal Mountain area allowed a remotely triggered, 3-ft deep, soft slab avalanche to bury a skier within the resort boundary. From south to north snowfall totals for December were impressive – 160” at Mt. Hood Meadows, 128” at Snoqualmie and 232” at Mt. Baker.

The snow tapered off in late December and early January with periodic weak systems and clear periods that allowed for surface hoar growth that was subsequently buried by light snowfalls. A stronger system impacted the area from January 7-9, prompting another avalanche warning and a widespread natural avalanche cycle as snow changed to rain at lower elevations.

High pressure developed in mid-January with most stations experiencing twelve days with no precipitation. One of the strongest high pressures in years dominated the region, trapping cold air and fog in the lowlands while higher elevations basked in the sunshine with freezing levels near 10,000 ft. While this period was uneventful weather wise, there were two separate avalanche accidents involving sensitive wind slabs near Stevens and Snoqualmie passes. When it was over, January had received roughly half the amount of snow compared to December, and freezing levels averaged about 3000 ft. higher. The lack of a rain event in the northeast Cascades allowed surface hoar layers from early and late January to become buried and reactive in field tests. Thorough field reports from the North Cascades Mountain Guides helped NWAC forecasters identify the persistent weak layers, which showed up in the regional forecast for nearly a month.

February was characterized by a split flow pattern with weak weather systems arriving every few days. Snowfall totals for the month were about the same as January but with cooler freezing levels. A more active storm cycle returned at the end of February with 2-4 ft. of snow falling over the 5 day period ending on February 26. Most natural avalanches were direct-action, but some larger slides failed on surface hoar formed during a lull on President’s Day, even on the west slopes.

A juicy atmospheric river with rising freezing levels hit the PNW at the end of February and into March. The warming trend and subsequent rain loaded earlier storm snow and caused another widespread avalanche cycle. A very deep slab released in upper White Canyon on Mt. Hood (see photo), but luckily no one was caught. Worsening conditions deterred many backcountry skiers, but rapid loading and warming caught one skier inbound at Stevens Pass during this period.

After a warm and wet start to March, the storms tapered off with only light to moderate snowfall events falling on a stout rain crust. A storm system developed in mid-late March, delighting powder hounds. Four to six ft. of snow fell on Mt. Hood and the western Cascade slopes. Storm and wind slabs were active during this cycle, but no significant accidents were reported.



© Tiahe Stovanoff

Just as NWAC began to wind down the season in mid-April, a cool and active period returned for the last ten days of operations. A vigorous storm system, followed by a strong Puget Sound convergence, pummeled the central Cascades, especially the Snoqualmie Pass area where they received almost three inches of water at Alpental in just three days ending April 14. Intense precipitation rates on Saturday, April 13 coupled with warming created a dangerous and, in the end, deadly combination on this day. The base of Alpental averaged roughly one inch of snow per hour for much of the daylight hours. Interstate 90 over Snoqualmie Pass would eventually close in the evening for avalanche control work which resulted in slides running down to and below I-90.

Unfortunately, two fatal accidents occurred on

## Accidents

With only two avalanche fatalities in the Northwest, the winter of 2012-13 finished slightly below average compared to other years. Indeed, as the charts below indicate, this seemed to be a relatively quiet year of avalanche activity in most of the country, with only 24 avalanche fatalities throughout the US, which is below the recent 5-yr moving average of just over 29. Moreover, when combined with only five Canadian avalanche fatalities for the year (well deserved kudos to our northerly neighbors), the North American total of 29 avalanche fatalities for 2012-13 is well below most recent years. While these numbers can be partly attributed to the somewhat mild winter, we are hopeful that our education and outreach efforts are also having an impact.

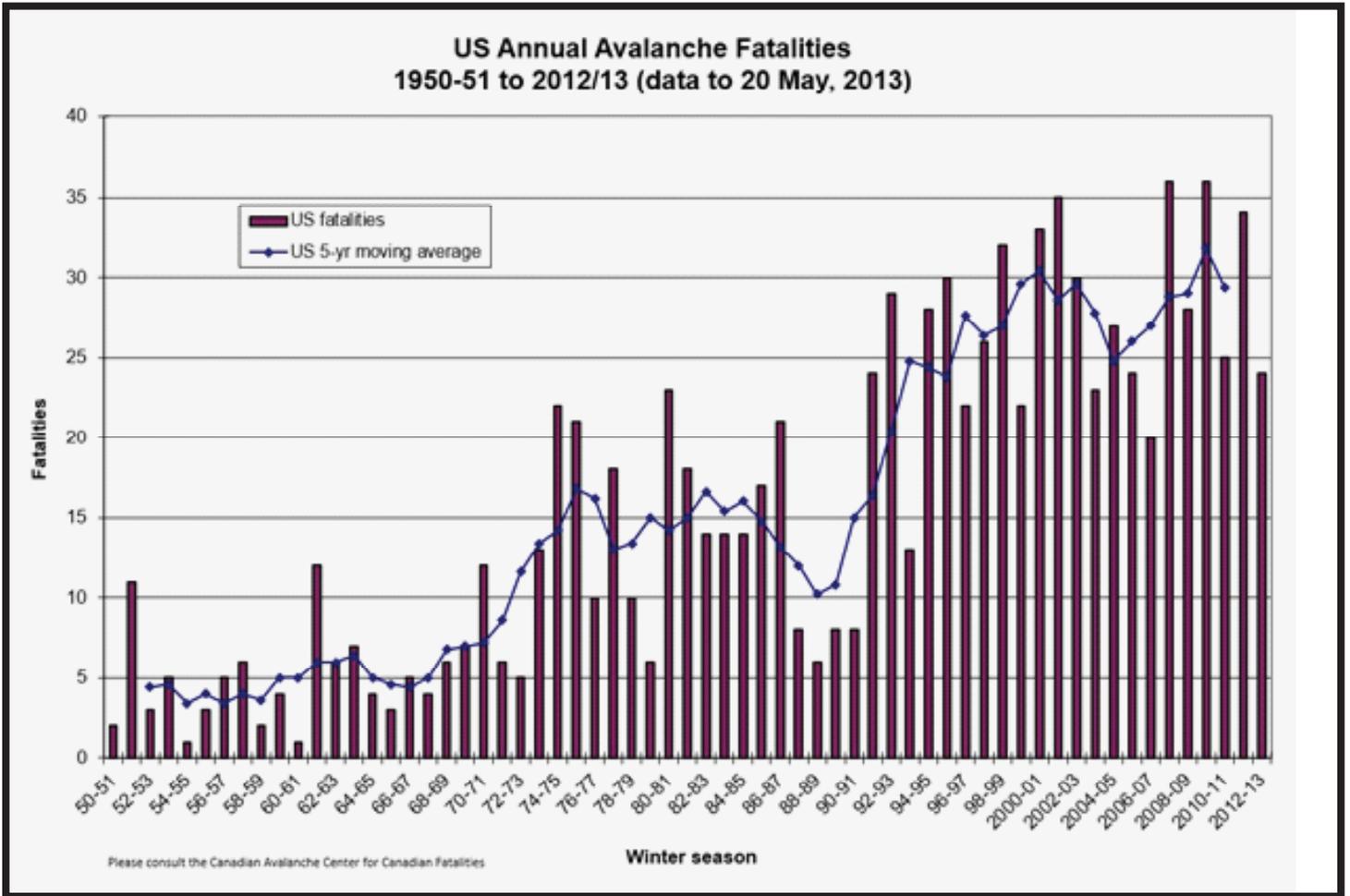
It is also interesting to note that the majority of the fatalities throughout North America this winter were backcountry skiers and snowboarders, with snowmobile deaths dropping to the lowest level seen since 1992-93. In the Northwest, this is the second year in a row with no snowmobile related avalanche fatalities, a trend that we hope will continue and one that also results, at least

Saturday afternoon in the Snoqualmie Pass area. The first included a trio of climbers on Granite Mountain who were climbing directly up an active slide path. The slide was triggered around the 4700 ft. level and the two surviving members went for a 1300 ft. ride according to their GPS. The victim was not recovered for about a month due to weather and avalanche concerns complicating rescue efforts. The other accident involved a solo snowshoer who had joined a large group headed up Commonwealth Basin to Red Mountain.

The second half of April kept NWAC forecasters on their toes with special avalanche statements issued for an unusually strong and cold weather system. The winter-like conditions gave way to an unusually long stretch of warm May weather. More special avalanche statements were issued

to some extent we hope, from increased outreach and educational efforts with the snowmobile community.

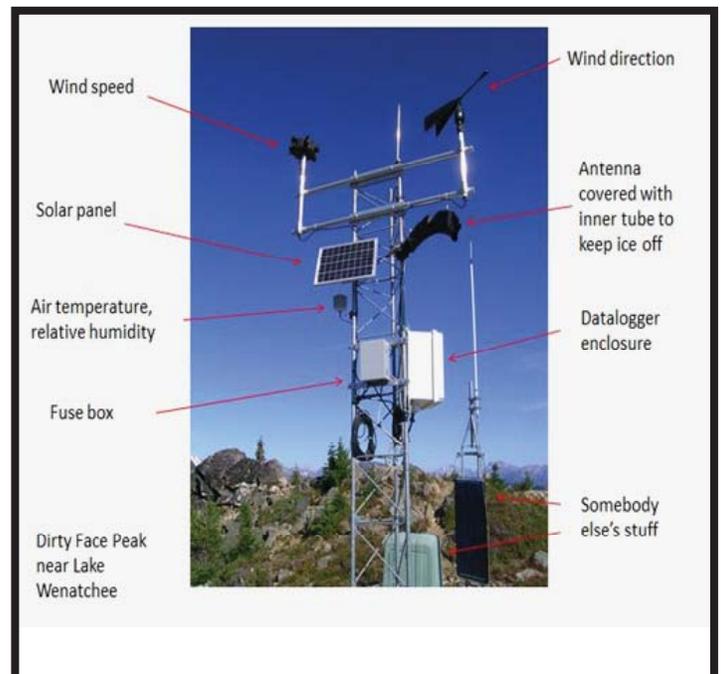




## Weather Stations

With a lot of help from program cooperators, NWAC continued to maintain 46 weather stations from Mt Baker to Mt Hood in the Cascades and at Hurricane Ridge in the Olympic Mountains. The stations are located at ski areas and WADOT facilities, and on land managed by the National Park Service and the US Forest Service. The stations require ongoing maintenance and periodic repairs that are performed by NWAC forecasters and program cooperators. A computer is maintained at the NWAC office which downloads and formats the data and uploads the formatted data to our web site.

With the help of the Stevens Pass DOT avalanche crew we installed a new base weather station at Blewett Pass this season.



## Public Outreach

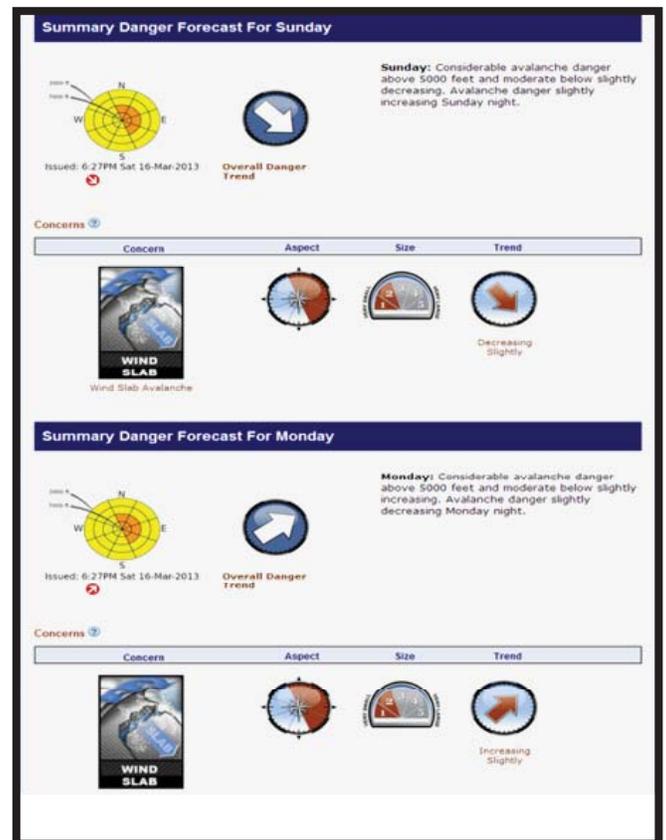
An avalanche forecast is only helpful if the public knows to check it and is able to understand it. In an effort to ensure that this is the case, we have worked hard to ensure that the NWAC website is user-friendly and spread the word about the availability of the forecast through the use of traditional and social media.

### Website:

As mentioned above, we made some big changes to the NWAC web site this season. The most significant was the addition of the “concern icons” along with text specifically addressing the most relevant features in the avalanche forecast. This improvement was very well received and brought the NWAC forecast more in line with the American Institute of Avalanche Research and Education’s (AIARE) teaching guidelines. In addition to this significant change, we also continued to develop the GIS map with Western Washington University, enabling both professional and recreational users to upload avalanche observations to the map. NWAC received 133 observations this season from 55 different observers. This functionality was a big help for the forecasters, who received information for areas where it was previously lacking.

These improvements did not go unseen, as the NWAC website once again had a phenomenal amount of traffic, with almost 1.7 million visits from over 456,000 unique visitors. However, for the first time since the NWAC forecasts became available on-line in the 1990s, there was a slight drop in traffic from the previous year, likely due to the rather uneventful winter. Not surprisingly, web site usage over the course of the winter reflected the weather conditions quite closely.

It is worth noting that the average visit duration was up by 12.3 % and the percentage of new visits increased by almost 3%, resulting (we hope) from the improvements to the website and successful public



outreach that is bringing new users to the site.

As may be expected, mobile access to the NWAC web site continued to increase, rising from 26.5% of total visits in 2011-12 to 34.4 % of all visits in 2012-13.

Finally, traffic to the website was again split between visits to the home page, forecasts, data and educational information. Aside from the home page, the mountain weather forecast continues to be the page with the most hits (about 15% of all unique page views). The mountain weather data sites comprise about 40% of the unique page views, followed by the zone avalanche forecasts (~ 12% for all zones combined). Access to avalanche education, GIS displays, accident narratives, papers, books, videos etc. comprise the remaining 15% of the traffic.

## Website Statistics



## Traditional and social media

In an effort to ensure that the public is aware of the NWAC forecasts, we have worked hard to spread the word about [www.nwac.us](http://www.nwac.us) through the use of traditional and social media. We produced and distributed roughly 4000 avalanche safety brochures and 7500 avalanche hotline cards, and also published advertisements in three regional snowsport magazines. Our outreach efforts have generated interest with the regional and national media, which conducted 24 interviews with NWAC and FOAC staff this season.

On the social media front, we have continued to develop our Facebook presence where we post any avalanche watches, warnings or special statements in addition to news about events and other happenings in the avalanche field. Our list of friends is growing rapidly and currently stands at over 3800!

## Education

This has been another great season for the NWAC education program. We have experienced excellent growth in all of our three targeted demographics: adult, youth, and snowmobile, and our education efforts are continuing to expand into new locations and user groups. This season, we conducted 112 public awareness classes and lectures which reached over 5000 people, almost twice as many as last year. Eleven of these classes were snowmobile specific events and 26 were presented to youth.

In addition to our basic awareness classes, we also launched a new program called Going Deep, targeting experienced backcountry skiers and riders, and addressing some of the limitations of awareness classes and conventional avalanche education when it comes to decision making. The

series of five classes was a huge success, and we will be conducting a similar series next season.

We also provided \$2000 in funding for the Northwest Snow and Avalanche Summit, a day-long symposium on avalanches with roughly 300 professional and recreational attendees.



## Fundraising

While contributions from the partnering agencies and organizations make up a significant component of NWAC and FOAC's budgets, we continue to rely heavily on a variety of fundraising strategies not only to raise money but also to bring the community together for good times in support of avalanche safety.

This was a busy winter for FOAC, as we developed new strategies to grow our membership, grew our website advertising program, and expanded our schedule of events, making a significant effort to reach out to communities outside of Seattle. Highlights of our fundraising efforts include the following:

- Hosted the 12th Annual SnowBash in Seattle on November 15. For the second year in a row we filled the Nectar Lounge with roughly 350 people and raised close to \$8000.
- Hosted inaugural SnowBash events in Glacier and Leavenworth, WA as well as Portland, OR. All three events were well-received, and we look forward to growing them in future years.
- Partnered once again with Outdoor Research, The Summit at Snoqualmie and Pro Guiding to host the 5th annual Vertfest at Alpental on Presidents Day weekend in February. The event grew again this year with 156 racers, 60 clinic attendees and 175 people demoing gear. The continued growth of the event has interested more sponsors who lent a great deal of support. Presenting sponsors included Coast Mountain Culture, La Sportiva, Mammut, Mountain Gear, Osprey, Scarpa, Second Ascent and Stanley. When all was said and done, the event raised over \$20,000 for NWAC.
- Hosted the 5th annual Snowball Dinner and

Auction at the new Museum of History and Industry. This gala event continues to grow and this year raised close to \$75,000 from over 350 attendees!

- In addition to events organized and hosted by FOAC, NWAC benefited from fifteen events hosted by other organizations on behalf of FOAC. All told, these events raised over \$45,000. FOAC and NWAC are extremely appreciative of the efforts put forth by all of the individuals and organizations involved with these events, including Powderwhore Productions, North Bend Theater, American Alpine Institute, Crystal Hotels, Chair 9, Mt Baker Splitfest, Oregon Splitfest, The Mountain Shop, WyEast Nordic, Mt Hood Meadows, Mt Hood Ski Bowl, Second Ascent and Stevens Pass.
- Raised over \$43,000 from 27 companies who advertised on the FOAC/NWAC website. This number continues to grow as more companies realize the benefits of reaching such a large, passionate audience of winter enthusiasts.
- Increased our individual memberships by 263%...up to 684 members!

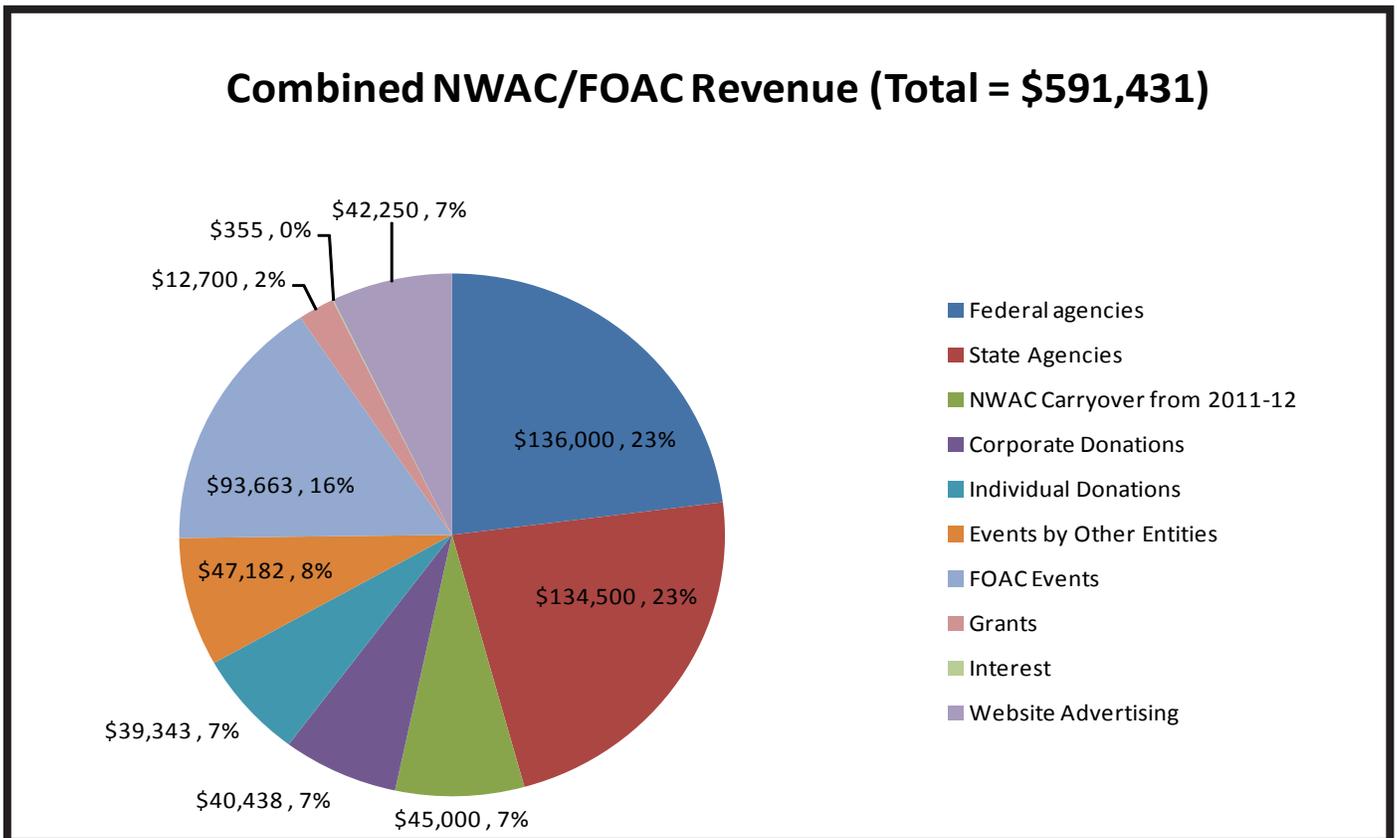
All told, our fundraising efforts have raised over \$234,000 for avalanche safety in the PNW!



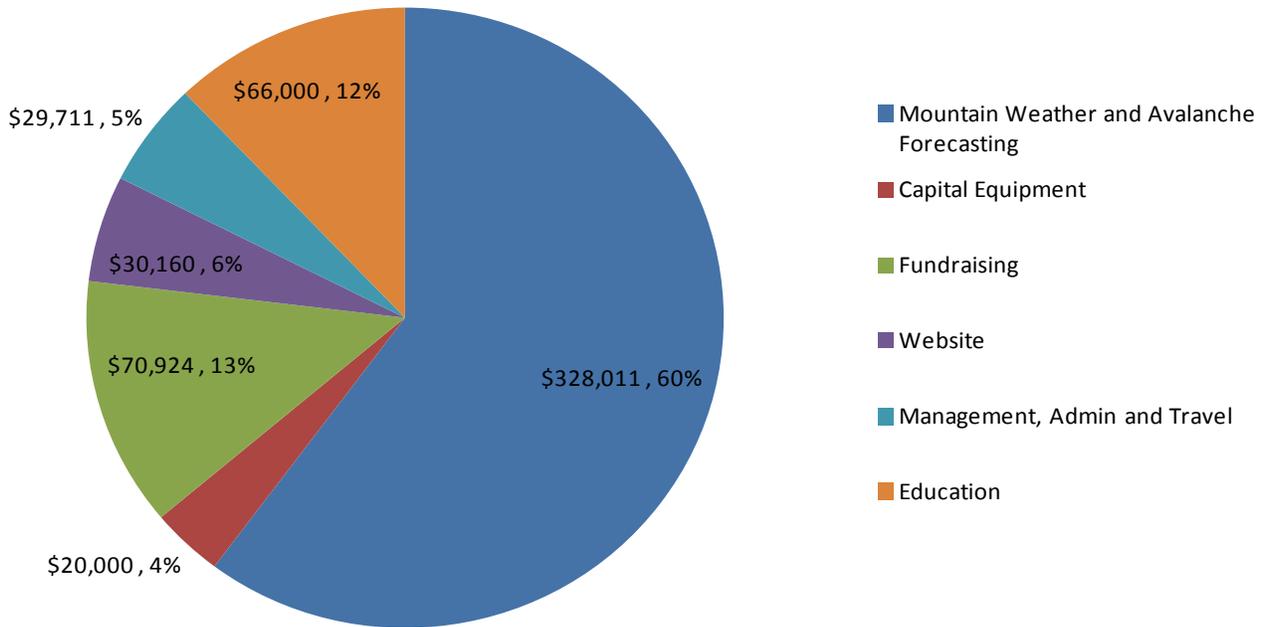


## 2012-13 Statement of Activities

As NWAC's and FOAC's operations become more intertwined, and much of FOAC's budget is either passed through to NWAC or spent on the combined website, the need for presenting separate budgets has come into question, and we feel it is more useful to present the total amount of revenue and expenses that are involved with the operation of both organizations, and thus contribute to public avalanche safety in the Northwest. Thus the following charts show the combined revenue and expenses of NWAC and FOAC.



### Combined NWAC/FOAC Expenses (Total = \$544,806)



FOAC’s cash balance as of 6/30/13 is \$309,893. This balance primarily comprises our emergency reserve, which we maintain in case any of the cooperators that fund NWAC decrease or discontinue their support for any reason.



## Thank You

The work of FOAC and NWAC would not be possible without the support of the many companies and individuals who contributed time and money to FOAC and NWAC last season. We are truly grateful.

### NWAC Cooperators

NWAC would not exist without the vital support of the seven cooperating agencies and organizations that fund the majority of the program.

- US Forest Service
- Washington State Parks and Recreation Commission
- Washington State Department of Transportation
- National Oceanic and Atmospheric Administration – National Weather Service
- National Park Service
- Northwest Winter Sports Foundation
- Pacific Northwest Ski Areas Association

### Company and Organization Donors

The work of FOAC and NWAC would not be possible without the support of the many companies and organizations who contributed time and money to FOAC and NWAC last season. We are truly grateful.

#### Extreme Hazard (\$1,000+)

American Alpine Institute  
Backcountry Access  
BAS Family Foundation  
Cascade Designs  
Crystal Mountain Lodging  
Crystal Resort  
Evo  
Flylow  
K2 Sports  
La Sportiva  
Mammut  
Microsoft Corporation  
Mountain Gear  
Mt Baker Ski Area  
Mt Baker Splitfest  
Mt Hood Meadows  
North Cascades Heli Skiing

North Cascades Mountain  
Guides  
Northwest Mountain  
School  
Oregon Splitfest  
Osprey  
Outdoor Research  
Pacific Alpine Guides  
Pinnacle Sales  
Powderwhore  
Pro Guiding  
Scarpa  
Second Ascent  
Stanley  
Stevens Pass  
Summit at Snoqualmie  
Timberline Lodge  
Timberline Mountain  
Guides

Voile  
White Pass

#### High Hazard (\$500-\$1,000)

Alta Group  
Black Diamond Equipment  
Boeing Employees Alpine  
Society  
Clif Bar  
International Snowmobile  
Manufacturers Association  
Mountain Shop  
Mountaineers Books  
Pow Gloves  
Pro Ski - Seattle, WA  
Ridge Explorations  
Ski Patrol Rescue Team

Snoqualmie Pass Fire Fighters  
Teton Gravity Research  
Venture Snowboards  
Washington Alpine Club

**Considerable Hazard (\$200-  
\$500)**

Alaska Brewing  
Ellensburg X-Country Ski Club  
Frey Foundation  
Funny Feelings  
Google  
International Mountain Guides

Leavenworth Mountain  
Sports  
Mt Baker Guides  
Snowrider Foundation-PDX  
Sound Physical Therapy  
Triangle Community Founda-  
tion  
United Way of the Columbia-  
Willamette

**Moderate Hazard (\$100-  
\$200)**

Chelewah Sno Posse

Evergreen Escapes  
Seattle Mountain Rescue  
**Low Hazard (<\$100)**

Bluewater Distilling  
City of Seattle  
G3  
Liberty Mutual  
Mazamas  
Mountaineers  
Pacific Power Foundation  
Qualcomm Charitable Founda-  
tion  
Standard Insurance Com-  
pany

## Individual Donors

The winter backcountry community is the heart and soul of NWAC and FOAC. Without the generosity of the many passionate individuals listed below, our work would not be possible.

**Extreme Hazard (\$1,000+)**

Brent Bishop  
Colby Brinnon  
Daniel & Jennifer Dole  
Ellen Butzel  
Erik Hagstrom  
Gary Kuehn  
Hubert Eichner  
Jen Gombas  
Kathleen Sheehan  
Larina & Robert Lee Davis  
Mark Callaghan  
Murray Kahn  
Susan Ashlock

**High Hazard (\$500-\$1,000)**

Aaron Ostrovsky  
Alex Morgan  
Amanda Camp  
Andrea Molitor  
Andy Hill  
Anthony Hoag  
Colin Dettweiler

Doug Rawlings  
Eddie O'Neil  
Emily Wen  
Erik Olson  
Georg Klein  
Janelle Shafer  
Joel Spiegel  
John Dobrowolski  
Jorie Wackerman  
Josh Gaul  
Katharine Testin  
Kendall Stever  
Lowell Skoog  
Michael Clyde  
Michael Masters  
Rebecca Norlander  
Roland Emetaz  
Samantha Beadel  
Sandy Ting  
Scott Anderson  
Sue Bialous  
Susan Dehmlow  
Thea Lehming Brandt  
Tim Straight  
Todd Gits  
Tom Savelle

**Considerable Hazard  
(\$200-\$500)**

Aaron Haran  
Adam Hitch  
Alexandre Laudon  
Bill Snead  
Bob Rodgers  
Bruce Smith  
Charlene Hansen  
Charles Daitch  
Chip Nevins  
Chris Cass  
Chris Farias  
Chris Martin  
Chris Morin  
Chris Murphy  
Craig Taylor  
Curtis Hammond  
Daniel Dietzman  
David Strauss  
Derek Ormerod  
Doug Caley  
Ellen Slater  
Emma Johnson

Helen Todd  
Jackie Logan  
James Keany  
Jason Dennett  
Jennifer Stephenson  
Jesse Bommarito  
John Alberts  
John Cary  
John Stimberis  
Jonathan Fisher  
Judith Swain  
Justin Kors  
Kathleen Hurley  
Kimberly Shavender  
Leigh Noble  
Lewis Turner  
Mike Farrell  
Quinn Hawkins  
Regan Smith  
Robert Stephenson  
Ron Jarvis  
Scott Kindred  
Scott Szeman  
Sheila Mehri  
Sheri Gail  
Skip Edmonds  
Skip Swenson  
Steven Copson  
Susan Bolton  
Suze Woolf  
Tom Lee  
Tracy Barnes  
Trish Maharam  
Tyler McCoy  
Virginia Thomas  
William Hodgman  
William Wagner

**Moderate Hazard (\$100-  
\$200)**

Adam Jata  
Alex Shapiro  
Alexis Alloway  
Amanda Stoneham  
Andrew Cahn  
Andrew Ensslen  
Andrew Mergen

Andrew Nelson  
Andrew Sullivan  
Andrew Weller  
Ann Scott  
Anne Fox  
April Hogue  
Bari Bookout  
Barrett Amos  
Benj Drummond  
Bess Sorensen  
Bill McJohn  
Bob Kroese  
Bob Wicks  
Brian Connolly  
Bryon Free  
Candice Wong  
Carleton Keck  
Charles Hagedorn  
Christopher Chapin  
Clint Schneider  
Colin Darrah  
Colin MacDonald  
Colleen May Hinton  
Colt deWolf  
Craig Mckibben  
Cynthia Hickey  
Cynthia Krass  
Dale Karacostas  
Dan Brady  
Daniel Ach  
Daniel Kress  
Daniel Silverberg  
Dave Bishop  
Dave Galvin  
David Combs  
David Gasser  
David Hooper  
David Schultz  
Dennis D'Amico  
Dennis Trimble  
Dotti and Bob Wilson  
Douglas Smart  
Dwayne Dunaway  
Dylan Currie  
Edward Burns  
Eric Basha

Erica Cline  
Erik Ferjancic  
Fitz Cahall  
Florence Mohler  
Franklin Bradshaw  
Frederick Matsen  
George Whyel  
Gerhard Schneider  
Graham Parrington  
Greg Starup  
Gregg Lithgow  
Hillary Lipe  
Ian Craigie  
Imran Rahman  
Irena Netik  
Ivar Chhina  
James Greenleaf  
Jane Van Dam  
Jed Yeiser  
Jeff Kilpatrick  
Jeffrey Hunt  
Jeffrey Pattison  
Jennifer Sargeant  
Jerry Casson  
Jesse Peck  
Jessica Kelley  
Jim Hirshfield  
Jim Sternod  
John Bertsch  
John Connor  
John Mixon  
John Vert  
Jon Muellner  
Josh Serbonich  
JR Jesson  
Karl Watt  
Karlen Trucke  
Katie Cava  
Katja Jacob  
Katrina Hilpert  
Ken White  
Kent Pearson  
Kevin Carlin  
Larry Gail  
Larry Gregerson  
Laura Leblanc

Lawrence Miller  
M Hartmann  
Marcus Robins  
Marie Mills  
Mark Gray  
Mark Moore  
Martin Chisholm  
Mary Willy  
Matt Goyer  
Merrienne Makela  
Michael Magruder  
Michael Murphy  
Michelle Miller  
Mike Palmer  
Monte Alves  
Morgan Zentler  
Nathaniel Johnsen  
Nichole Embertson  
Nick Gorton  
Nick Rohrbach  
Patrick Brewer  
Patrick Grubb  
Patti Polinsky  
Paul Gissing  
Paul Kriloff  
Paul Ryder  
Paul Werner  
Peter Baer  
Peter Held  
Ramanujan Srinivasan  
Rich Horigan  
Richard Draves  
Richard Korry  
Richard Lambe  
Richard Marriott  
Robert Blumberg  
Robert Busack  
Robert Coffell  
Robert Johnson  
Robert Mercer  
Rory Hollins  
Russell Anschell  
Rusty Hibbert  
Sarah James  
Scott Stephenson  
Serge Lindner

Seth Dennis  
Spencer Mcnamara  
Stacy Chatfield  
Steve Price  
Steve Rybolt  
Steve Saugen  
Stuart Lee  
Tesia Forbes  
Thomas Trause  
Timothy Ahlers  
Tipton Blish  
Tobae Mcduff  
Tom Eglin  
Tomas Matousek  
Trisha Palanio  
Val Thompson  
Vanessa Brewster  
Warren Lisser  
Wes Giesbrecht  
Woody Hoyer  
Zak Menkel

**Low Hazard (<\$100)**

Aaron Miller  
Abigail Harley  
Adam Brandt  
Adam Funk  
Adam Lewis  
Alan Lord  
Alan Widmer  
Alex Cheng  
Alex Sandrow  
Alex Throne  
Alexander Macdonald  
Alison Fohner  
Allyson Moore  
Amy Burt  
Amy Mann  
Andrew Baker  
Andrew Carey  
Andrew Chang  
Andrew McDavid  
Andrew Watterson  
Andy Gregory  
Angela Loihi  
Anita Cech

Anna & Scott Bartels  
Annette Frahm  
Anthoni Tsuboi  
Anthony Bell  
Anthony Brusco  
Anthony Reynolds  
Arnold Larson  
Aubrey Laurence  
Bala Krishnamoorthy  
Barclay Fitzpatrick  
Ben Hodgman  
Ben Lee  
Benjamin Weaver  
Beverly Armstrong  
Birgit Osterhaug  
BJ Shannon  
Bob Alexander  
Bob Keller  
Bonnie Eiber  
Bram Whillock  
Braunsen Goebel  
Brent Lower  
Brian Booth  
Brian Flinn  
Brian Leonard  
Brian Polagye  
Brian Smith  
Brian Ulman  
Brian Young  
Bruce Burger  
Bruce Smith  
Bryan Bergstedt  
Bryan Colgur  
Bryan Sehmel  
Bryce Stevens  
Calvin Hall  
Cameron Lee  
Camille Dohrn  
Carlos Cummings  
Carmela Collins  
Carmen Lystand  
Carolyn Miesel  
Carolyn Porter  
Carter Woolen  
Carvel Harward  
Catherine Bombico

Cathleen Jessup  
Chad Kamins  
Charles Davis  
Charles Palluck  
Charles Riley  
Charles Soncrant  
Charlie Atkinson  
Chase Gruszewski  
Cheryl Lawrence  
Chris Clark  
Chris Coleman  
Chris Larsen  
Chris Lawson  
Chris Miske  
Chris Morgan  
Chris Reitz  
Chris Utzinger  
Christian Horton  
Christian Lehew  
Christopher Feather  
Christopher Roslaniec  
Ciel Sander  
Clara Hard  
Clayton Walton-House  
Cleveland Pinnix  
Clifford Eckman  
Clifford Knitter  
Cole Thompson  
Colin Wagoner  
Connie Holloway  
Connor Inslee  
Connor Mccoy  
Conrad Herberholt  
Converged Green  
Craig Camapbell  
Craig Mcclure  
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FOAC would not be able to operate without the assistance of a great group of volunteers. From helping to organize Snowball to gate keeping at Vertfest to selling raffle tickets at Snowbash, FOAC volunteers kept us going with almost 180 hours of volunteer time. Thank you all!

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