

ANNUAL REPORT



2014



Public Safety in Avalanche Terrain

The Utah Avalanche Center is a partnership between the USDA Forest Service and the nonprofit group Friends of Utah Avalanche Center.

Additional major funding comes from:
Utah Division of State Parks and Recreation, Utah Division of Emergency Management, Salt Lake County and Salt Lake Unified Fire Authority

AVALANCHE OVERVIEW

Our goal is to keep people on top of the greatest snow on earth instead of buried beneath it

Where do avalanche accidents occur?

Ninety nine percent of all avalanche fatalities occur in the backcountry— areas outside of ski area boundaries where no avalanche control is done. Ski areas and highway avalanche control crews routinely knock down avalanches with explosives before the public arrive each morning. They have done their jobs so well that since 1980, less than one percent of avalanche fatalities have involved general public on open runs at ski areas or on open highways.

What kind of people get caught in avalanches?

Ninety two percent of people killed in avalanches since 1985 have been recreationists, and they are almost always very skilled in their sport. In almost all cases their skill in their sport significantly outpaces their avalanche skills. Looking at the most recent 10 years of national data, snowmobilers lead the list followed by backcountry skiers, snowboarders, climbers and miscellaneous recreationists such as hikers and snowshoers.

How do people get caught?

In 93 percent of avalanche fatalities, the avalanche was triggered by the victim or someone in the victim's party. Which is actually good, because most of the time, we can avoid avalanche accidents through our route finding and snow stability decisions.

In summary, avalanche fatalities occur almost exclusively in the backcountry, almost always involve recreationists, and almost all avalanche incidents can be avoided if we choose. We give backcountry travelers the weapon of knowledge.

How to access up to date avalanche information

Our avalanche advisories give the public critical avalanche information they need to make their life-and-death decisions in avalanche terrain and we forecast snow stability and weather trends into the future. Our information helps the public to decide what kind of terrain is safe, what kind is dangerous and we give them useful clues to look for when they venture into avalanche terrain

The public can access these advisories in the following ways:

- The Internet
Recorded telephone message updated each day
Regular live interviews on radio stations
- E-Mail
- Twitter
- In times of extreme or unusual avalanche conditions, we issue an avalanche warning that



reaches all the broadcast and print media as well as NOAA weather radio.

- The UAC mobile app

Finally, we “preach the avalanche gospel” as much as possible to the local, national and international media. The Forest Service Utah Avalanche Center staff has been featured on dozens of national and international documentaries about avalanches and they regularly appear on the national television news.

Avalanche awareness and education

The Know Before You Go program taught 161 free classes and reached over 7,000 people this year. These not only give the public an overview of the avalanche problem, but also some basic avalanche skills. These classes encourage the public to take a more involved avalanche class.

Our Communication Philosophy

Just because people read or hear the information doesn't mean they pay attention or retain the information. Therefore, we make the advisories simple, graphical and often entertaining so that people will remember it and enjoy the experience enough to use the advisories regularly. We write using active voice, first person, personal examples and stories to illustrate points, humor where appropriate and we read the audio bulletins in a natural voice, like talking to a friend. The Internet-based products are graphically-based and targeted to users with a Level 1 avalanche certification. The advisories are extremely popular with over 2 million page views per year on our web site.

A LOOK UNDER THE HOOD

The UAC is operationally separated into five regions:

- Logan area Mountains (Wellsville and Bear River Ranges).
- Wasatch Mountains (Ogden, Salt Lake, Park City and Provo area mountains
- Western Uinta Mountains (Mirror Lake Highway, Weber Canyon, Evanston WY, Daniel's Summit)
- Manti Skyline (Fairview Canyon - Wasatch Plateau)
- La Sal Mountains (near Moab)

All forecasts are issued by full time Forest Service employees. Friends of Utah Avalanche Center (FUAC) employees often work part or full time as field assistants, avalanche educators, video support or other duties. Toby Weed forecasts for the Logan area mountains with FUAC contractor Paige Pagnucco. Based in Moab, Eric Trenbeath forecasts for the nearby La Sal and Abajo Mountains. The Moab office is located in the Moab Ranger District on the Manti-La Sal National

Forest. Craig Gordon issues forecasts for the western Uinta Mountains, does the lion's share of avalanche education for snowmobilers in northern Utah and developed the Know Before You Go awareness program. Ted Scroggin, from the Evanston Ranger District regularly works as a Uinta field partner along with FUAC employee, Trent Meisenheimer who also heads up video productions. Craig Gordon and Brett Kobernik issue weekend forecasts for the Manti Skyline. The vast majority of the backcountry use occurs in the Wasatch Range—arguably the most heavily used mountain range in the U.S, which includes the communities of Ogden, Salt Lake City, Park City and Provo. Evelyn Lees, Drew Hardesty and Brett Kobernik forecast for the Wasatch Range. Our office is co-located with the National Weather Service near the Salt Lake International Airport. Brett Kobernik is also our webmaster. Bruce Tremper, in his 28th season, is the Director and oversees operations statewide as well as forecasting part time for the Wasatch Range.

Finally, a private, nonprofit group, the Friends of the Utah Avalanche Center, contracts about 30 "volunteer" observers, who receive \$10 per day for taking the extra time to call or e-mail their observations after they return home at the end of an outing.

The Utah Avalanche Center is a collaborative effort between the Forest Service under the Uinta Wasatch-Cache National Forest and the Manti-La Sal National Forest and Friends of Utah Avalanche Center. Other major funding partners include Utah State Parks and Recreation, Utah Department of Public Safety, Division of Emergency Management, Salt Lake County, the National Weather Service. (See Budget section for more details.)



Utah Avalanche Center - Full time personnel, from left, Friends of UAC: Paul Diegel and Devin Dwyer; UAC Forecasters: Drew Hardesty, Evelyn Lees, Bruce Tremper, Craig Gordon, Eric Tenbeath, Brett Kobernik, Toby Weed. Not pictured, part time personnel: Ted Scroggin, Paige Pagnucco, Trent Meisenheimer.

CONTACT

Telephone

- All Areas (courtesy of Backcountry.com). (888) 999-4019

Radio Stations

- KPCW 92 FM (Live interview, 8:06 am weekdays)
- KSL Radio every Saturday Morning

Internet

- www.utahavalanchecenter.org
- www.wrh.noaa.gov/Saltlake (National Weather Service)

E-mail

We offer daily automated e-mail of the advisories free of charge. About 2,240 e-mails are sent each day.

Mobile

We have an iPhone app where users can check conditions as well as send observations.

To contact our office

- PHONE: (801) 524-5304
- FAX: (801) 524-4030

- EMAIL: uac@utahavalanchecenter.org

To contact the Friends of Utah Avalanche Center

- PHONE: (801) 365-5522
- EMAIL: friends@utahavalanchecenter.org

The Utah Avalanche Center welcomes any questions or feedback from the general public. We would love to explain our organization to anyone who is interested.

PARTNERS

The Utah Avalanche Center is the epitome of a successful partnership organization. Thanks so much to our major funding partners and to the National Weather Service for office space, weather forecasting and technical support. (See the Sponsors section for a complete list.)



STATE OF UTAH
NATURAL RESOURCES
Division of Parks & Recreation



Black Diamond™



2013-2014 POINTS OF INTEREST

Season Overview

Three avalanche fatalities occurred in Utah--two snowmobilers and one snowshoer. We knew of 152 people who unintentionally triggered an avalanche in the backcountry, of those, 60 people were caught, 14 partially buried, 8 completely buried, 6 injured and 3 killed. This ranks as the fourth most active year in Utah history based on the number of people caught.

The season was snowy in the north and dry in the south. The Logan area mountains ended up with 120% of average snow water equivalent while southern Utah ended up with 20-40 percent of average.

Contacts

Website visits, email advisories, phone calls, and mobile app sessions combined to make over 1.2 Million user contacts and over two million page views. We also fielded media contacts from all over the world. National and international media interviews: television, 7; Print, 9; radio, 5. Local interviews: television 60; print, 15; radio 40.

Personnel Changes

Eric Trenbeath rejoined the La Sal office as Forecaster after a several year hiatus, replacing Max Forgensi. The part time Education Coordinator position grew to a full time position with additional bookkeeping, social media, and administrative responsibilities. Also, Devin Dwyer's role as Education Coordinator grew from part time to full time in 2014 as she took on more administrative and social media responsibilities National Nonprofit Relationships

The UAC led efforts to build relationships between the non-profit Friends groups across the US, resulting in the creation of a Facebook group and a meeting, held at the Winter Outdoor Retailer Show, including representatives from the Utah, Northwest, Sierra, and Mt. Shasta avalanche centers

Project Zero

The UAC partnered with a number of other avalanche organizations: NWAC, CAIC, CAC, AIARE, SIA, and NSAA to form Project Zero, which is a combined U.S. - Canadian project with the goal of zero avalanche fatalities. As the first of many projects, we helped sponsor a study of sidecountry riders as a first step in developing an international marketing campaign. In a social media campaign, the public submitted over 30 videos illustrating their backcountry and side country safety procedures. The top 5 submissions were awarded prizes and the winning video will be featured in the next Sherpas video.

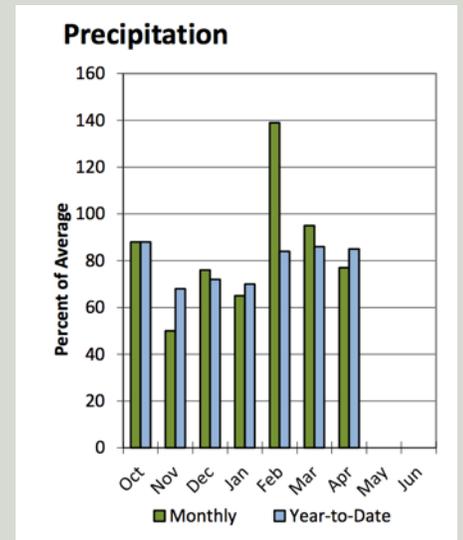
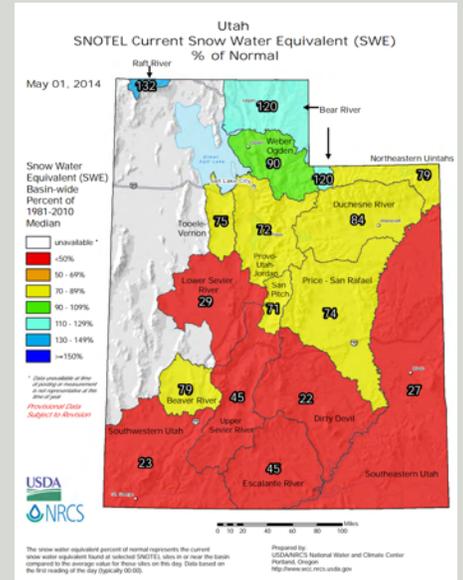
Ski Mountaineering Event

The Utah Avalanche Center partnered with the Wasatch Powderkeg and Outodor Research to hold the first annual Brighton Vertfest fundraising and awareness event in March featuring 3 days of ski mountaineering racing, backcountry skills clinics, demos, and celebration.

SNOW AND AVALANCHES

It was one of those years when double the annual average snow fell north of us in Wyoming with half the annual average snow in southern Utah. The dividing line ran through Ogden with the Logan area mountains ending up with 120% of average; the Wasatch Range, Uintas and central Utah ended 70–80% of average; southern Utah had 20–40% of average. It was also warmer than average with several rain events and a higher rain-snow line. The mountains looked similar to how Evelyn Lees described a previous year – “It’s as if a child had decorated a cake with frosting, but had all but forgotten the sides.”

But the details of how, when and the type of the storms is much more important than the total amount. By the end of a fiendishly cold December, total snow hovered around heart breaking, half of average, which meant that Utah harbored a thin, weak, rotting snowpack that could not support much weight once it ever started snowing in earnest. The drought finally broke in February, which was also our snowiest month of the winter. And just as we predicted, the avalanches suddenly roared to life. On February 8th, with the arrival of a wet, warm storm with rising rain-snow line, we issued an Avalanche Warning and the advisory stated, “A HIGH avalanche danger will border on EXTREME this weekend. Avalanche runout zones are to be avoided as they may be triggered at a distance and below.” Two people died in separate incidents over the next two days. The snowpack remained persistently dangerous through much of February with several days rated as High and Extreme. The Logan area mountains were especially unstable with many large, deep slabs triggered by people and several very close calls. The deep slab instability had mostly settled out and by March except in the perennially shallow, weak snowpack of the Uinta Mountains where large, deep avalanches continued well into March. Unfortunately a snowmobiler was killed on March 7th.

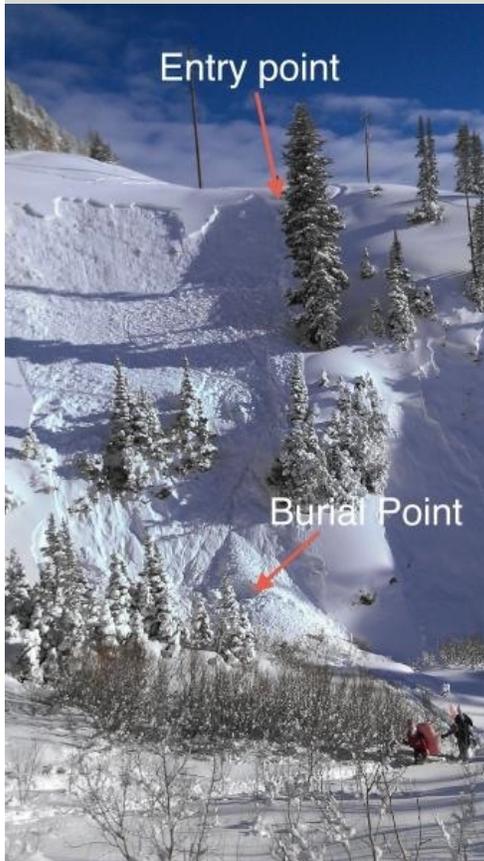


Top – Percent of average snowpack at May 1st.

Bottom – Percent of average snowfall per month

Left – One of the many, monster avalanches in the Uinta Mountains. Logan had 3 total burials with miraculous recoveries.

AVALANCHE INCIDENTS AND ACCIDENTS



Left: A pro skier, who was completely buried in Grizzly Gulch near Alta, deployed her airbag and was able to walk away. Her party members did not have beacons but two separate parties who witnessed the event luckily did.

Middle and right: A huge avalanche triggered by snowmobilers in the Logan area mountains with one person buried. Although they did not have rescue gear, the fingers of the victim barely protruded above the snow and the party members were able to dig with their hands and get him out in time to save his life.



Photo contributed by Hunter Casey

Because of the very unstable year, we had a near-record human triggered avalanches with many close calls including 8 full burials, of which, 3 died, 2 were near the surface and extracted themselves and three miraculous recoveries in the Logan area mountains, all of which involved snowmobilers who were totally buried in separate incidents and the victims were recovered by their party members, not breathing, but responded to CPR. One victim broke multiple bones and survived only because of heroic rescue efforts in very difficult weather. Rescuers had to haul him to the top of a long slope using ropes. In another incident, the party lacked beacons or shovels but luckily they spotted a couple fingers of the victim's red gloves sticking out of the snow. You can find more information on these and other incidents on our website at UtahAvalancheCenter.org. Below is a synopsis of the three fatalities that occurred this season:

UNINTENTIONAL HUMAN TRIGGERED AVALANCHES	TRIGGERED	CAUGHT	INJURED	KILLED
	152	60	6	3

AMERICAN FORK - TIBBLE FORK RESERVOIR, FEBRUARY 8, 2014

A group of snowshoers from BYU were traveling in a gully just two hundred feet off the road, near the Tibble Fork parking lot in American Fork Canyon, Provo area mountains. The group triggered a small avalanche and 21-year-old Ashleigh Cox was caught and swept into the water at the bottom of the creek bed and buried. Approximately 40 minutes later she was recovered, face down, from the water with no pulse, and did not respond to CPR. She died the next day in the hospital. The avalanche was a small soft slab - about 18 inches deep, 230' wide, and only traveled 125' vertical. The steep slope ended in a classic terrain trap gully, and was at the low elevation of 6400'. The avalanche occurred right after the largest storm of the season, when wet heavy snow mixed with rain occurred at the lower elevations, falling on about a foot of faceted snow that was becoming saturated with water. A late January rain crust may have been a player in the avalanche stratigraphy. Gullies seem small and unassuming to those with no avalanche education, and can often look like natural logical paths to travel in the winter.



MANTI SKYLINE - HUNTINGTON RESERVOIR, FEBRUARY 9, 2014

A group of 4 experienced snowmobilers, all with avalanche rescue gear, were out for the day. Clinton Conover, of Ferron, Utah, circled up a slope to aid his friends with stuck snowmobiles, when he triggered the slide that caught, buried and killed him. His friends immediately began rescue efforts, but he was buried 6 to 8 feet deep, it took 20 minutes to extricate him, and he did not respond to CPR. It did not occur in the typical big, open terrain of the Manti Skyline but on a small, wind protected bowl with well-spaced conifers. The group specifically avoided large slopes that day because of the avalanche danger. The slab collapsed on faceted snow below a mid-pack rain crust. The rain crust allowed the slab to connect across a fairly wide area, and run out an unusually long distance.



WESTERN UINTAS - GOLD HILL, MARCH 7, 2014

It was a tough season for those recreating in the Uinta snowpack - early season snow followed by a long dry spell with cold temperatures created a basal layer of facets that remained active from January through March. While large storms and wind in January and again in February created some historic slide cycles with massive slides in the Western Uintas, not every slope slid. Slopes remaining had a simple but dangerous snowpack - a hard slab sitting on very weak basal facets. In the afternoon, Ryan Noorda and his brother were heading back to their RV, and stopped to play around on a smaller slope. It was complex treed terrain - a short steep slope, but connected to steeper terrain above. The four foot deep, hard slab broke 200 feet wide and was most likely triggered from below. The avalanche buried Ryan deeply on a bench where the snow piled up. His brother found him with a beacon search, extricated him and performed CPR, heroically aided by another group. Medical personnel pronounced him dead on the scene. This was a sad accident, where even a relatively small avalanche combined with the bad consequence of a terrain trap proved to be fatal.



Friends, rescuers and staff from the Utah Avalanche Center visit the fatality site the following day.

AVALANCHE AWARENESS AND EDUCATION

Know Before You Go

The Friends of Utah Avalanche Center offers our free Know Before You Go program for less experienced users in schools, youth groups and local snowmobile and ski shops across Utah. The program typically lasts an hour and consists of video, PowerPoint, and Q&A session. Local Utah athletes give many of the presentations, which helps spread the avalanche message to a critical target audience by respected community members. This season, we gave 161 presentations to 7,104 people.

Field-Based Education

The Friends of Utah Avalanche Center schedule and organize several more detailed, field-based classes taught by UAC forecasters--typically an evening lecture and a Saturday field day. These include four different Avalanche 101 classes, 3 classes for snowshoers, 3 classes for snowmobilers, an advanced avalanche skills class and an advanced freeride class. Over 500 people attended these classes. In addition, UAC forecasters often teach private classes for search and rescue groups throughout Utah.



Utah Snow and Avalanche Workshop

The sixth annual Utah Snow and Avalanche Workshop (USAW) brought over 700 avalanche professionals and high-end backcountry users together for a day of continuing avalanche education at the Southtowne Expo Center on November 2. The professional session focused on worker safety and medical issues while the afternoon session covered a 2012-13 season summary, accident recaps, a rescue from the perspective of emergency response personnel, airbag technology and results and human factors. USAW 2014 will be held on Saturday, Nov. 1. Craig Gordon organizes this huge event each season.



PROGRAMS AND PARTNERSHIPS



Are You Beeping?

The UAC provides 29 Are You Beeping signs, some with beacon checkers, at resort backcountry gates and snowmobile trailheads. A new sign design, featuring attention-grabbing colors and a new, graphic-oriented message, was implemented, with 6 new signs printed and 4 new beacon checkers purchased. An Eagle Scout project helped fund three new site installations which include key snowmobile trailheads at Strawberry Reservoir, Trout Creek and Snake Creek. In addition, a generous donation from Weber County Search and Rescue will help secure a sign and beacon checker for Monte Cristo, the busiest snowmobile trailhead in the state.



Lift Ticket Partnership

Many thanks to Backcountry.com, Ski Utah, and our ski resort partners for their very generous support with this year's discount lift ticket program. The ski resorts donate lift tickets which are in turn sold at a discount by the Utah Avalanche Center through Backcountry.com. 100% of the proceeds go to the non-profit Friends of Utah Avalanche Center to help fund operations. We collected \$41,021 this year. We continue to enjoy a great relationship with the Utah resorts, communicating regularly on snow conditions and cooperating on avalanche education for pros and the public.



Observer Program

The Utah Avalanche Center has nurtured a group of about 40 dedicated backcountry users who submit their observations, which greatly contribute to the daily avalanche forecasts. This group is paid a nominal amount to call in or submit an online form describing what they see in the backcountry. The group ranges from hard core recreationalists to snow safety professionals. They are extremely valued contributors and are the envy of many other avalanche centers within the U.S. Over 1000 observations were submitted this year.

MEDIA CONTACTS

The UAC forecasters regularly respond to perhaps a couple hundred requests for information and interviews from various media outlets. In the past, we have documented them fairly accurately but this season, with such a flurry of activity, we struggled many long hours just to keep up with media demands and much of our documentation slipped through the cracks. So we had to partially estimate many of these numbers: National and international media interviews: television, 7; Print, 9; radio, 5. Local interviews: television 60; print, 15; radio 40.

In addition we do daily, live radio interviews each morning on local Public Radio station KPCW, a Saturday morning interview on KSL, a monthly in-studio extended interview on Park City TV. The Salt Lake Tribune posts the daily danger ratings for all the regions on their weather page. During times of increased avalanche danger we often post avalanche warnings as a heads up on popular ski and snowmobile website forums. And finally, we have a unique opportunity to provide a live “on air” forecast and week in review each Sunday with our local Fox News affiliate. It’s a great way to reach a wide audience, show avalanche related pictures and video, help explain how avalanches work and how to avoid them. Our unique partnership with local media in Utah helps to save lives.



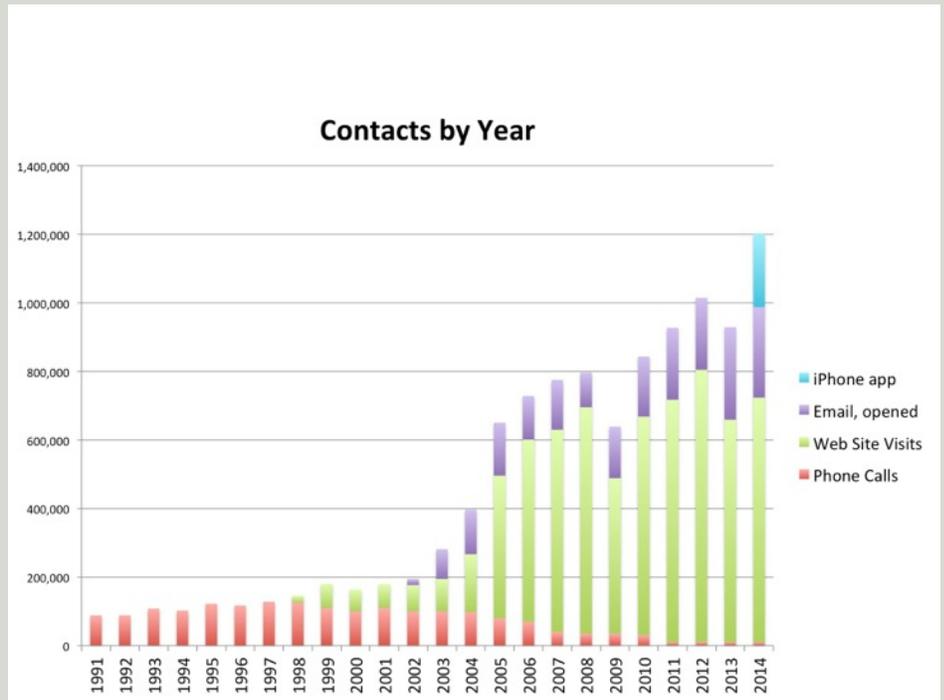
The Utah Avalanche Center staff fields around 70 television interviews per season, not only with local media but a number of national and international interviews.

CONTACTS

The website, mobile application, daily email advisory, and phone hotline combined in over 1.2 million connections with the UAC and 2.05 million page views (the average website visitor viewed about 3 pages per visit). In addition, the UAC broadcasts advisories by radio and distributed avalanche-related news and education via Twitter, Facebook, and Instagram. The UAC partnered with Black Diamond, Backcountry.com, and Outdoor Research to produce and distribute videos promoting brands as well as avalanche awareness and key avalanche concepts.

The UAC continued to add more ways for users to get critical avalanche information; we added Instagram photos and promoted the iPhone mobile application that had a limited launch in March, 2013. Both were well-received, especially the iPhone app. A new advisory email system, incorporated into our open-source website software, was adopted to simplify advisory creation and eliminate the monthly service charge. Requiring users to re-subscribe to daily SLC advisories removed many inactive and obsolete addresses from our files and increased the open rate of emails to about 50%.

Especially for younger user groups, social media has become much more important than traditional media. Social media also has the advantage of two-way communication; users can communicate avalanche information back to the forecasters. We use Twitter and Instagram both for breaking news and to distribute the daily avalanche advisory, YouTube and Vimeo for our many videos of fieldwork and tutorials, Facebook for announcements and events and many people use our app to view avalanche information and submit observations.

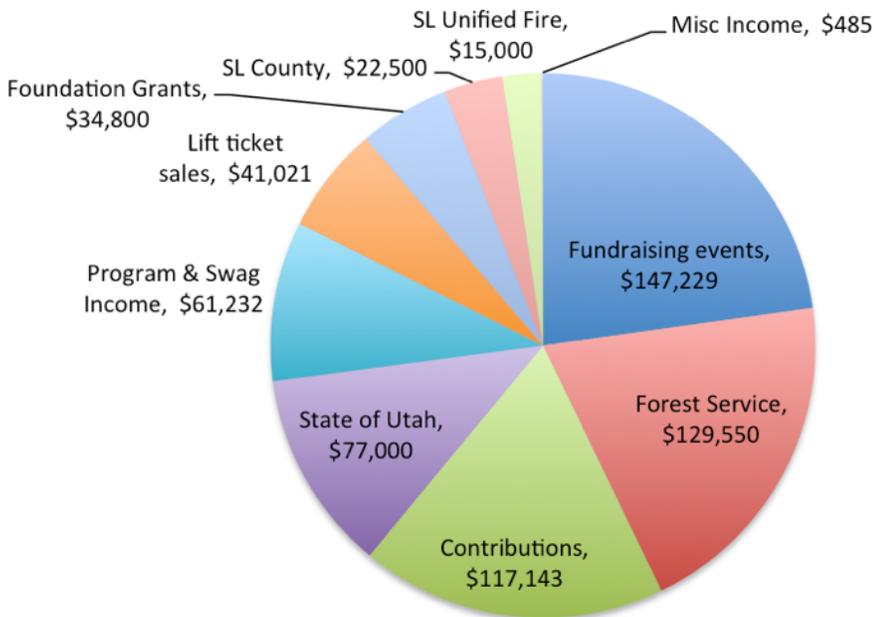


2013-14 Connections

- Facebook:** 7,405 Likes
- Twitter:** 4,075 Followers, 594 tweets, 1,134 retweets
- YouTube:** 25 videos, 27,753 views
- Instagram:** 1,605 Followers, 135 Posts
- SLC Email Advisories:** 2,238 Subscribers, 264,341 Opened emails
- Mobile Application:** 9,670 Downloads, 213,101 Uses, 1,693 Average Active Users
- Utahavalanchecenter.org:** 709,307 Visits, 2,035,512 Page Views, 232,406 Unique Visitors
- Vimeo:** 13 videos, 36,967 views

BUDGET

2014 Total Funding Statewide



Total statewide funding by all funding sources is \$590,000

The Utah Avalanche Center is a partnership between the U.S. Forest Service and the nonprofit Friends of Utah Avalanche Center. In addition, several local and state government agencies contribute funding. In other words, the Utah Avalanche Center is the epitome of a successful partnership organization. With such strong community support along with numerous and diverse funding sources, the Utah Avalanche Center will continue to exist as an essential public safety entity in Utah. Here are the details of the various funding sources:

The Forest Service Intermountain Region Office provides an earmark for base funding of \$92,238 for the Uinta-Wasatch-Cache National Forest and \$25,312 for the Manti-La Sal National Forest, \$5,000 from the American Fork Recreation Fee funds and the Evanston Ranger District provides \$7,000 in salary for one Ted Scroggin for field observations. This totals \$129,550 from all Forest Service sources.

Most of the funding for the UAC comes from the non-profit funding sources, making up a little over \$400,000 in FY 2014. \$112,000 was contributed directly to Forest Service salaries under a collection agreement and the remainder was spent executing and administering education and awareness programs and building a contingency and endowment fund.

Utah Division of State Parks and Recreation has been a longtime funding partner with the shared interest in providing avalanche forecasting and education especially to snowmobilers throughout Utah. Their contribution of \$53,000 partially funds avalanche forecasting for Logan and the western Uinta Mountains and without their support, avalanche forecasting would not exist in either of these areas.

Utah Department of Public Safety, Division of Homeland Security continued their longtime supporter of the UAC with an annual contribution of \$25,000, which is used throughout Utah to help fund avalanche forecasting and education. Salt Lake County continued their annual support for the UAC for many years with a contribution of \$22,500, which helps fund the Salt Lake-based avalanche forecasters. The Wyoming Recreation Trails grant provided \$15,000 for snowmobile forecasting and education for the north slope of the Uinta Mountains and, as mentioned above, the Evanston Ranger District provides \$7,000 additional support for Ted Scroggin's valuable fieldwork for the north slope. Finally, Salt Lake Unified Fire Authority provides \$15,000 through a donation to FUAC.

The total program budget for the year is about \$590,000.

SPONSORS

5: Extreme (Over \$20,000)

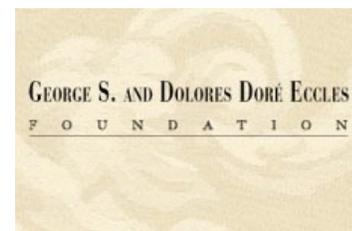


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4: High (\$10,000 to \$20,000)



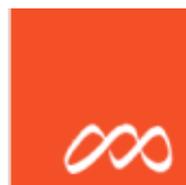
3: Considerable (\$4,000 to \$9,999)



backcountry.com



WASATCH MOUNTAIN CLUB



2: Moderate (\$1,000 to \$3,999)



Visit UtahAvalancheCenter.org for a complete list of sponsors.



PREPARED BY:

Utah Avalanche Center staff

COMPILED BY:

Bruce Tremper