ANNUAL REPORT 2012

KEEPING YOU ON TOP
UTAH AVALANCHE CENTER

FOREST SERVICE
US
DEPARTMENT OF AGRICULTURE

Public Safety in Avalanche Terrain

The Utah Avalanche Center is a partnership between the Uinta-Wasatch-Cache National Forest and the nonprofit group the Friends of the 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
- Live interviews each day on three different public radio stations
- E-Mail
- Podcasts
- 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.

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 education

The UAC staff teaches about 15 free, basic avalanche awareness classes each season and the Know Before You Go program teaches 125 free classes and reach over 15,000 people per 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 offered by the private sector.

Our Communication Philosophy

Just because people read or hear the information doesn't mean they pay attention. Therefore, we try to make the advisories entertaining so that people will remember what they read and hear and enjoy the experience enough to use the advisories regularly. We try and use all the standard tools of effective writing and speaking such as using active voice, first person, personal examples and stories to illustrate points, humor where appropriate and reading the bulletins in a natural voice, like talking to a friend. The recorded bulletins are informal, chatty and funny, yet informative. The Internet-based products are graphically-based and easy to understand. The advisories are extremely popular with over 2 million page views 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)

Toby Weed staffs the Logan operation. A generous contribution from the Utah State Parks funds this position.

Based in Moab, Max Forgensi forecast for the nearby La Sal Mountains. The Moab office is located in the Moab Ranger District on the Manti-La Sal National Forest and is supported by both the Moab Ranger district and a generous contribution from Utah State Parks.

Craig Gordon issues forecasts for the western Uinta Mountains as well as the Manti Skyline, does the lion's share of avalanche education for snowmobilers in northern Utah and developed the Know Before You Go awareness program. This position is supported by a generous contribution from Utah State Parks and the Friends of the Utah Avalanche Center.

Last, but not least, the vast majority of the backcountry use occurs in the Wasatch Range of northern Utah. A staff of four full time workers coves the Ogden, Salt Lake City, Park City and Provo area mountains—arguably the most heavily used mountain range in the U.S. Bruce Tremper, in his 25th season, is the Director. The rest of the very experienced Salt Lake staff include: Evelyn Lees, Drew Hardesty and Brett Kobernik. All are Forest Service employees under the Uinta-Wasatch-Cache National Forest. The Salt Lake office is co-located with the National Weather Service at the Salt Lake International Airport.

Finally, a private, nonprofit group, the Friends of the Utah Avalanche Center, contracts a number of "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 program under the Uinta Wasatch-Cache National Forest and the Manti-La Sal National Forest, in partnership with Utah State Parks and Recreation, Utah State University, the State of Utah Department of Public Safety, Division of Emergency Management, Salt Lake County, the National Weather Service and private contributions through the Friends of the Utah Avalanche Forecast Center.

Utah Avalanche Center

From left, Brett Kobernik, Bruce Tremper, Toby Weed, Evelyn Lees, Drew Hardesty, Craig Gordon,
not pictured, Max Forgensi

CONTACT

Ways you can find the critical avalanche information and contact our office

The public can access bulletins in the following ways

Telephone

- All Areas (courtesy of Backcountry.com). (888) 999-4019
- Manti Skyline (courtesy of Utah State Parks). (800) 648-7433
- Snowmobile hotline (courtesy of Utah State Parks). (800) 648-7433

Radio Stations

- KRCL 91 FM (7:50 am weekdays)
- KPCW 92 FM ((8:06 am weekdays)
- All other radio stations via both long and short podcasts.

Internet

- www.utahavalanchecenter.org (Friends of Utah Avalanche Center)
- www.wrh.noaa.gov/Saltlake (National Weather Service)

E-mail

We offer daily automated e-mail of the advisories free of charge. About 3,500 e-mails are sent each day.

To contact our office

- PHONE: (801) 524-5304
- FAX: (801) 524-4030
- EMAIL: uac@utahavalanchecenter.org

To contact the Friends of the 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 in the different functions that the Utah Avalanche Center has.

2011-2012 POINTS OF INTEREST

Almost Record Setting Low Snowfall

2011-12 was a complete flip flop from the previous record setting large snow year of 2010-11. It ended up ranking 3rd lowest annual snowfall on record at the Alta Guard station since 1944. It was a close race with 1976-77 in first lowest with 314", 1960-61 in second lowest with 326", and this year, 2011-12 in third with 329.5".

Annual Fatality Numbers Up

An average of four avalanche fatalities occur in Utah each winter. This year, 5 people perished in avalanches. Being a very lean year for snowfall, it seems counterintuitive that there would be more fatalities. However, long dry periods between storms is the exact things that's are needed to produce "persistent weak layers" within the snowpack. This faceted persistent weak layer formation is what causes most fatal avalanches in Utah.

FUAC Non Profit Branch Hires First Two Paid Employees

Two positions were created to manage the growing non-profit duties that the Friends of the Utah Avalanche Center oversees. The first was the Executive Director which manages the lions share of the managerial tasks. Paul Diegel, formerly the FUAC President, accepted the position.

The second position was an Education Coordinator who oversees all of the Know Before You Go talks as well as avalanche classes put on by the FUAC. Devin Dwyer accepted that role.

UAC Implements an Online Store

The Utah Avalanche Center continued to use the benefits of it's Drupal content management system by installing an Online Store done by the work of Brett Kobernik. This store allowed the UAC to sell its soft goods and to do avalanche class registrations which greatly streamlined managing the FUAC avalanche classes.

SNOW AND AVALANCHES

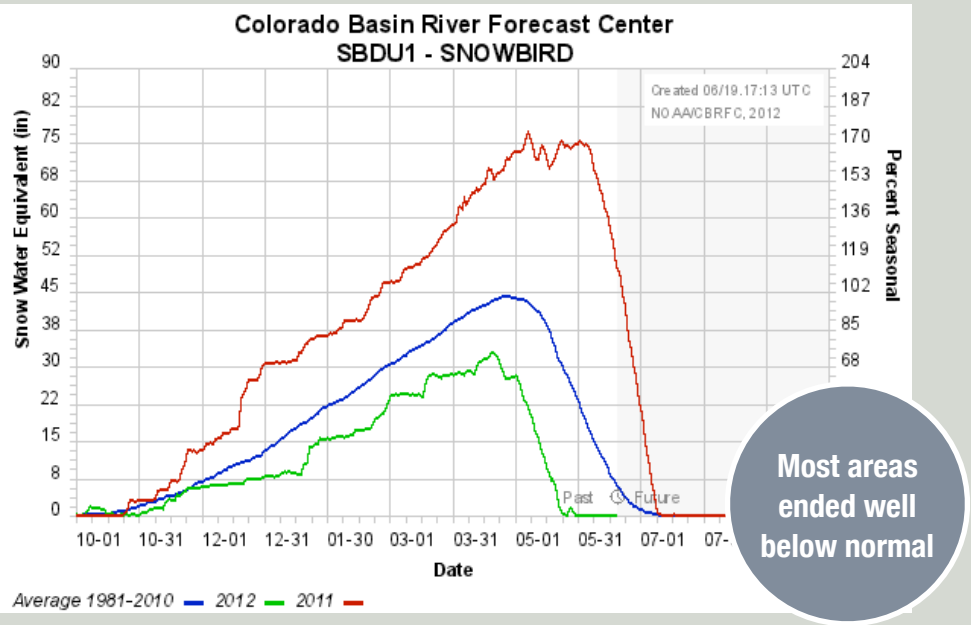
The 2011-12 winter season started with a large snow storm in early October which was followed by nothing until November. This produced the first weak layer, which, once the November storms came, claimed a life. These November storms were then followed by a very prolonged period of little to no snow well into January. All of the early season snow turned into one thick layer of dangerous depth hoar. This weakness ultimately led to 4 more fatalities.

Around the 18th of January a large storm moved in and produced a thick layer of snow that capped off all the weak snow from earlier in the season. A large natural avalanche cycle occurred along with many human triggered avalanches. The weakness would be relentless.

Another dry period followed January's large storm and storms started again in mid February coupled with more natural and human triggered avalanches. There were a large number of close calls where people were caught and either fully or partially buried. Many air bags were deployed.

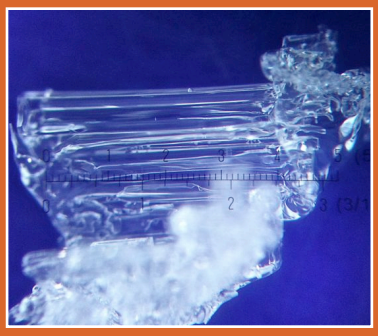
Toward the end of February and early March, the now deeply buried weak layers were more stubborn but still posed a threat. March only really had two large storms, otherwise, spring was well on its way with warming temperatures.

These warming temperatures tickled the buried weak layers again producing a natural avalanche cycle on the sunny east, south and west facing slopes. Once this cycle passed, the early season weak layers went dormant until it got warm enough in early May to once again reactivate them on the north facing slopes with the last natural deep slab cycle.



Snow/water equivalent chart: The 20011-12 season in green was well below the average in blue and last season's snowpack in red. A very meager year for powderhounds. A scary year for everyone.

SEASON SUMMARY



Season Long Weak Layer

Top - The dreaded depth hoar crystal that produced a weakness that lasted all winter.

Middle - Deep crown at a fatality site in the Fish Lake Area.

Bottom - Deeply buried weak layer producing natural avalanches during an early March warm up.

AVALANCHE INCIDENTS AND ACCIDENTS

Left: A skier fatality on the Manti Skyline on Horseshoe Mountain.

Lower Left: One of many close calls where air bags were deployed.

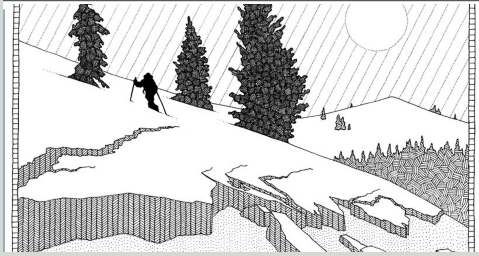
Below: Snowmobiler mostly buried in the Logan Region.

Fatal Accidents:

The weak snowpack was widespread throughout Utah and the 5 fatalities reflect that. Three occurred in the Central Wasatch, one in the Fish Lake area east of Richfield, Utah, and one in the La Sal Mountains near Moab, Utah.

All of the accidents shared a similar weak layer which formed in the early part of the season. There was a large number of very close calls as well where people were caught in big avalanches and were either partly or fully buried but ended up ok. A number of people deployed air bags that probably saved their lives. Others were lucky enough to have successful rescues by their partners. Some sustained some serious injuries.

For those who weren't so lucky, our hearts go out to the people that the accident has effected. The following page contains brief narratives of each accident. Go to utahavalanchecenter.org for the full reports.

UNINTENTIONAL HUMAN TRIGGERED AVALANCHES	TRIGGERED	CAUGHT	INJURED	KILLED
	77	39	8	5

SNOWBIRD SKI RESORT - CENTRAL WASATCH, NOVEMBER 13, 2011

A skier and a snowboarder were hiking in the closed Snowbird ski resort for a couple of early season runs. Neither of them were carrying avalanche rescue equipment. A storm was in progress and they triggered a large avalanche, in which they probably didn't realize the actual size of. They continued up to a familiar run that they knew to descend. The snowboarder dropped in first and immediately triggered an avalanche which caught and carried him 800 vertical feet through rocks and trees. He was only partly buried in the debris but was killed from trauma.

KESSLER MOUNTAIN - CENTRAL WASATCH, JANUARY 28, 2012

A group that ended up as two snowboarders and one skier ascended Kessler Mountain and intended on descending a committing chute into Mineral Fork. They were aware of the buried persistent weak layer but appear to have underestimated it. The victim, a snowboarder, started to descend and triggered a large avalanche that caught and carried him about 2500' below and buried him. Everyone had rescue equipment and his partners descended the treacherous path, now void of snow. They called 911 before they lost cell phone coverage then kept descending. They located the victim, dug him out and performed cpr with no response.

LOST CREEK RESERVOIR - FISH LAKE NATIONAL FOREST, FEBRUARY 5, 2012

Four snowmobile riders were out for a day of "boondocking" with no intention of doing any hill climbing. One was very aware of the dangerous weak snow near the ground. At the end of the day, the group was exhausted and they were looking for the fastest route home. They chose to utilize a summer road that crossed an avalanche path, a path they purposely avoided climbing. The four riders were starting across the path when they triggered the avalanche above them. The first two were caught. One of them was able to use the power of the machine to escape. The other was thrown off his sled and buried. The victim was wearing a beacon and two others used theirs to search but it took them over an hour and by the time the victim was located it was too late.

DUTCH DRAW - CENTRAL WASATCH, FEBRUARY 23, 2012

Two snowboarders left a well marked boundary gate at the top of 9990 Lift at the Canyons Ski Resort. While descending the large avalanche path, the first one triggered and was caught, carried and buried in an avalanche. The victim's partner immediately headed down to the debris and started searching. Other backcountry travelers in adjacent area came to help. One was sent for outside help. The people searched the debris but none of the parties were equipped with beacons or rescue gear. Someone struck the victim's snowboard with their ski pole and they started digging just as two Canyons ski patrollers arrived on the scene. The victim was dug out but it was too late.

BEAVER BASIN - LA SAL MOUNTAINS, MARCH 3, 2012

A group of 4 individuals decided to go on a snowmobile tour up into Beaver Basin in the La Sal Mountains, Utah. With no tracks to follow and deep snow, the group leader realized that they were entering a land of diminishing returns and needed to turn around. The group leader knew of a turn around point, unfortunately, they had to cross an avalanche path to get to it. Three of them made it across but the fourth was caught and buried from an avalanche from above. The party only had one beacon, one probe and two shovels. They were unable to find the victim. An organized rescue party found him the following day buried under 12' of avalanche debris.

PROGRAMS AND PARTNERSHIPS

Know Before You Go

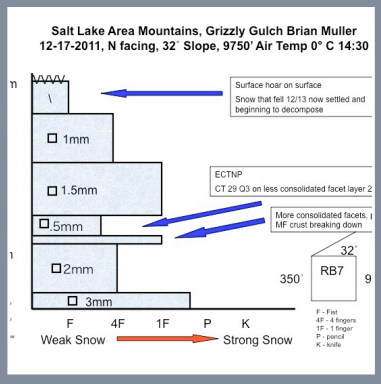
The Friends of Utah Avalanche Center taught 126 awareness classes in the 2011-12 season, reaching over 15,000 people. In addition to our basic avalanche awareness presentations, we held free awareness talks focused on advanced topics and current conditions. These talks were wildly popular and moving forward we plan to continue that format. We also completed a major facelift of the Know Before You Go video, refreshing the music, adding newly available footage, and incorporating more celebrity pro athletes to make the message even more attention-grabbing and impactful. Seventy five copies of the DVD were distributed around the U.S. and internationally.

Are You Beeping?

Currently, there are 15 Are You Beeping signs and beacon checkers implemented at ski resort backcountry egress gates. The signs have been a huge step in our ongoing efforts to reach a critical user group. Also, in partnership with the Utah Snowmobile Association we continued to maintain the Are You Beeping signage program which now includes fourteen major snowmobile trailheads statewide. Regional Forest Service monies will enable us to redesign the signs with a fresh, easy to understand message. We will unveil the face lift on regional wide level for the upcoming winter and look forward to seeing avalanche forecast centers implement this program.

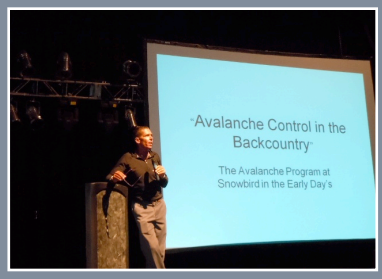
Lift Ticket Partnership

Many thanks to Backcountry.com, Ski Utah, and all our great 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 branch of the Utah Avalanche Center to help fund operations.



Observer Program

The Utah Avalanche Center has a group of dedicated backcountry users who submit their observations which help to produce daily avalanche forecasts. This group gets paid a nominal amount to call in or submit an online form describing what they are seeing 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.



Utah Snow and Avalanche Workshop

This was the fourth year for this workshop held just before the winter season gets started. It's a regional-wide event to refresh everyone who is involved with snow and avalanches. It is a place to learn and share knowledge. It consists of 15 minute presentations by local and regional snow professionals as well as some presentations from the general public. The morning session is geared toward professionals and the afternoon session is open to everyone. It appears that it's outgrown the venue at The Depot and will be hosted at a larger facility in 2012.

WEB AND CALL STATISTICS

Our website was again very popular this season with **two million** web page views! That averages about 11,000 page views per day from late October through early April.

As usual, when we look at page view numbers for the different regions, Salt Lake is the most viewed advisory. The Salt Lake emailed advisory is also included. The Salt Lake region is the only region that emails the advisory. About 40% of the emails are opened which adds up to about 210,000 views.

The number of people who get their avalanche information over the telephone recordings continues to drop as more and more people access critical avalanche information using the internet, both through their computer and mobile devices. In other words, 15 times more people access the advisory over the web than through the telephone recordings.

Still, the telephone information is important because many people tell us that they like to check the recordings while they are driving to the trailhead.

MEDIA CONTACTS

The UAC forecasters documented over 70 media contacts this season, and the real number is likely well over 100 because we handle so many requests during avalanche warnings that some go unrecorded. In addition we do daily, live radio interviews each morning on local Public Radio station KRCL and KPCW, a Saturday morning interview on KSL and a Friday night live call on Park City TV. Our daily short pod cast is also picked up by some radio stations, and the Salt Lake Tribune posts the daily danger ratings for all the regions on their weather page. Finally, we often post avalanche warnings as a heads up on popular ski and snowmobile website forums.

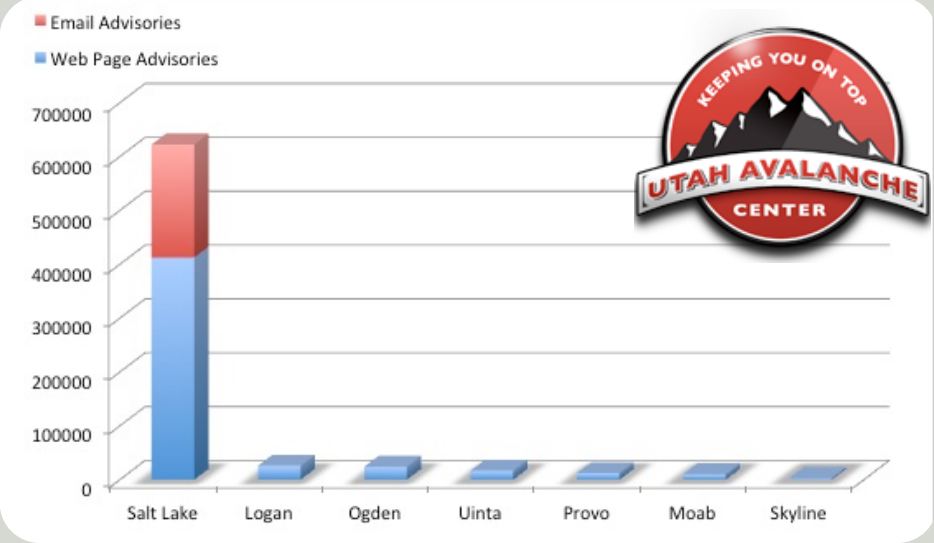
Many of our local media contacts are with the four Salt Lake city local TV stations. Sometimes this involves a taped or live interview with one of our forecasters, but more and more, they provide avalanche information from our web site on their own initiative, especially during storm cycles. We believe the local TV news is an excellent way for critical avalanche information to reach a broad group of people.

These media contacts have become an increasingly essential part of our program. Many avalanche victims are relatively avalanche-unaware and most victims do not read the avalanche advisory before heading out. Therefore, the only way to reach many potential avalanche victims is through the media sources they already use. We feel that media contacts really pay off, especially during times of heightened avalanche danger.

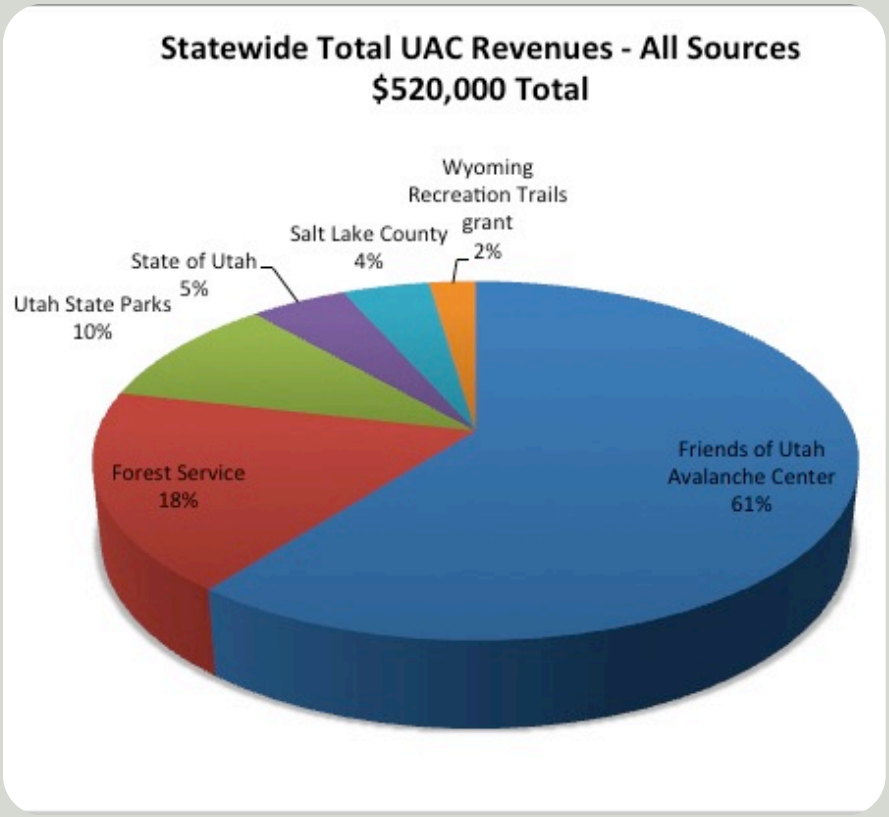
SOCIAL MEDIA

Social media tools like Facebook,Twitter, Youtube, Vimeo play a big role in communications these days. Social Media channels have the potential to radically change the way we receive and distribute information, especially to a younger generation.The UAC has just scratched the surface so far and plans to increase it's use of social media tools.

We believe that using social media is going expand people's avalanche awareness greatly. You will no doubt see the Utah Avalanche Center being "liked" and "tweeted" about all over the place during the upcoming season.



BUDGET



Total statewide funding by all funding sources is $520,000

The Utah Avalanche Center is a Forest Service - nonprofit partnership, which operates symbiotically to provide avalanche forecasting and education to the state of Utah. Around 80 percent of our funding comes from outside the Forest Service from various private and government sources who share a similar interest in developing and maintaining a state-of-the-art avalanche forecasting and avalanche education.

This season, FUAC donated $92,537 to the Forest Service to be used as salaries for UAC staff. The FUAC spends about $200,000 outside the Forest Service primarily on awareness and education programs.

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 $53,522 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. Thanks so much to Director, Fred Hayes and OHV Coordinator Chris Haller for their valued support and friendship through the years.

Utah Department of Public Safety, Division of Homeland Security has been a 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 has helped fund the UAC for many years with an annual contribution of $22.500, which helps fund the Salt Lake-based avalanche forecasters.

Expenditures by the Forest Service Utah Avalanche Center are almost entirely on salary and benefits with only 4 percent spent on travel.

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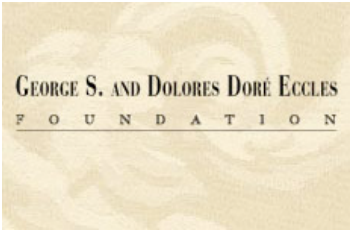
George S. and Dolores Doré Eccles
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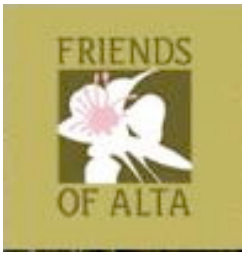
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