Snow and Avalanches in Utah

Forest Service Utah Avalanche Center

Annual Report 2007-2008

In partnership with:

Utah Division of State Parks and Recreation
Friends of the Utah Avalanche Center
National Weather Service
Utah Department of Public Safety
Salt Lake County

Cover photo: A very close call in the western Uinta Mountains. A snowmobiler triggered this large, full-depth avalanche in mid January from the looker's right third of the avalanche. He was buried 3-4 feet deep for about 15 minutes before his partners located him with a beacon in time to save his life. Notice that you can see rocks showing through the bed surface, indicating that it was a climax avalanche on depth hoar, a very weak, sugary layer that grows near the ground. This snowmobiler was extremely lucky.

All photos in this report are taken by the staff of the Forest Service Utah Avalanche Center unless otherwise noted. Compiled and Edited by Bruce Tremper & Brett Kobernik
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The Forest Service Utah Avalanche Center—An Overview

Our goal:

Help 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 5 years of national data, nearly twice as many snowmobilers have been killed as any other user group, followed by climbers, backcountry skiers, snowboarders 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. In order to avoid triggering avalanches, backcountry travelers need:

Critical, 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
- 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 30 free, basic avalanche awareness classes each season and the Know Before You Go program teaches 120 classes and reach over 22,000 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 web site is our newest focus on avalanche education. Our very popular encyclopedia which explains many terms used in backcountry travel using photos, diagrams and innovative flash animations. Using web photo galleries with captions explaining different aspects and routines in simple terms is a very effective way in teaching inexperienced backcountry users. We are also providing more detailed information for advanced users in the form of snowpit diagrams and seasonal weather history charts.

How We Help Solve the Problem:

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.

We believe local forecasters do a much better job than distant forecasters.
Local people know local conditions better. They can get out in the mountains every day, they see weather and snow out their window and they talk with people on the street about it. Because of this, we believe that local people should issue avalanche bulletins for local areas, as long as they have the avalanche skills to do so. For this reason, four crews of avalanche forecasters operate in Utah, one forecaster operates in Logan, four in Salt Lake City, one in the western Uinta Mountains and two others cover the Manti Skyline and the La Sal Mountains near Moab.

We believe in a strong field-based program.

Avalanche forecasting is just as much art as science. And because of this, computers never have, and most likely never will, be able to forecast avalanche hazard as well as an experienced and skilled human being. Avalanche forecasting works best when the forecaster has an intimate, daily connection to the snowpack. We notice that the longer we spend in an office, the more out of touch with the snowpack we become. Therefore we always put in one or more field days before our forecasting shift, and we seldom have more than two forecast days in a row.

This is our philosophy and it seems to be working. More people access the UAC bulletin each season than any other avalanche advisory in North America, and the number keep increasing by an average of 20 percent per year. The numbers of people going into the backcountry keep increasing exponentially, yet the death rate has risen more slowly. We also see an increasing demand for avalanche education and information, not only by Utahans, but also by the national and international media.

We are very passionate about our work because it's more than a job, it saves lives.

A Look Under the Hood

The UAC is operationally separated into four entities:

The 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 (FairviewCanyon – 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 and Dave Medara forecast not only for the nearby La Sal Mountains but they also issue weekend forecasts for the Wasatch Plateau—Manti Skyline area. The Moab office is located in the Moab Ranger District on the Manti-La Sal National Forest and us supported by both the Moab Ranger district and a generous contribution from Utah State Parks.

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

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 covers 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 21st 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 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 Forest Service program under the 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.

The public can access the 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 - live on-air reports each morning
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.com (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 2,000 e-mails are sent each day.

To contact our office:
(801) 524-5304 (phone)
(801) 524-4030 (fax)
e-mail: uac@avalanche.org

How We Generate Avalanche Advisories

We split our time more or less equally between the mountains and the office. For the Wasatch Range, a staff of four people rotate through the office in which one person comes in at 4:00 am to issue the forecast for the day while the others either head into the mountains to look at avalanche conditions, teach avalanche classes or come into the office at a more reasonable hour to work on various computer or education projects.

Field Day:
A typical field day might begin at 6:00 in the morning. Like most avalanche professionals, we click on our trusty NOAA weather radio shortly after getting out of bed for the latest weather forecast., then, we fire up our home computer to look at the data from all the automated mountain weather stations. Like everyone else, we call our own avalanche advisory to get the latest information. Finally, after calling the forecaster for the day to check out, we jump in the car or on the bus and head for the moun-

tains.

The forecaster in the field usually travels on skis or snowmobile or both, using all the usual safety equipment like electronic avalanche beacons, shovels, probes, belay rope and cell phones. We seldom have a regular patrol area, but simply go to the area that concerns us the most, or to a place that we know is representative, where we can safely look at snow on a variety of aspects, elevations and terrain types. We almost always go into the backcountry—meaning areas outside ski area boundaries where no avalanche control is done. Field days are often very labor intensive affairs, using climbing skins on skis to huff-and-puff to the top of a mountain, take off the skins, ski down into another valley, put the skins back on again, go to another ridge, and so on. Along the way we dig a number of "snow pits" in which we systematically test the stability of the snowpack. In more remote areas, we use snowmobiles to access avalanche terrain.

Field information comes from many different sources, but the most powerful information usually comes from snow pits we dig on a variety of different slopes, or better yet, from profiles dug at the fracture lines of recent avalanches. A snow pit, like the name implies, is a hole dug in the snow about a 5 feet deep and 5 feet wide. On a smoothed snow pit wall, we perform a variety of stress tests to determine the stability of the snowpack and document the shear properties of weak layers. We also look at the crystallography of the various layers—crystal type, size, strength, water content and density, as well as measure temperature profile. Practiced avalanche professional usually take about 15 minutes for each snow pit. We would rather dig several quick pits in several areas than do one detailed pit in one specific area because we want to know the distribution of the pattern so we can communicate the pattern to the public.

We also test the stability of the snow in other ways, such as sawing off cornices, which bounce down the slope, we keep close track of the pattern of recent avalanches and we always pay very close attention to the present snow surface because it's much easier to map a layer of snow when it's still on the surface then after it's buried by the next storm. When we get home, we write up our observation, graph the snow pit profiles and e-mail them to the avalanche center and also leave a detailed message on our answer machine in the office, which the forecaster will hear early the next morning. Often, we post photos of the day on our web site as well. Finally, each evening, we often call the person who will forecast the next day and talk to them in more detail, catch up on news of the day and bounce theories off each other. The days invariably end up being long, often racking up unpaid overtime.

It takes years of experience and training to be an accomplished avalanche forecaster, not to mention to be able to do it safely. Most of our staff have degrees in some kind of physical science such as meteorology or geology. We also have a number of years experience doing avalanche control at ski areas, plus, all are accomplished mountaineers with many decades of accumulated mountain experience and several are veterans of mountaineering expeditions throughout the world including Nepal, South

America and Alaska. W all stay in top physical condition so we can efficiently cover lots of terrain.

Office:

The forecaster for the day usually rises at 3:00 am—earlier on storm days—and arrives at our office, co-located with the National Weather Service near the Salt Lake Airport, around 4:00 am. There's only one avalanche person in the office, so the pressure and time constraints are intense.

First, the lead weather forecaster for the National Weather Service briefs us on the general weather setup and then it's time to jump on the National Weather Service computers and give the weather an even more detailed look, so it can be adapted to specific mountain areas. Then, we check our answer machines, faxes and e-mails for field observations not only from our staff, but from a dedicated corps of volunteer observers, ski areas, helicopter skiing companies and highway control programs. Next, the forecaster has to face a blank computer screen and type up a detailed narrative of snow stability and mountain weather and customize the advisory for five different zones in northern Utah. After the advisory goes out via e-mail and on the Internet, we begin recording the advisories into six different telephone systems, each located in a different local calling area for northern Utah and each one customized for a different area. Finally, we, do three live radio interviews. By 8:15 am, we're done and we collapse with relief, take that bathroom break we've needed for the last couple hours and take a walk outside and watch the sun rise and hope that our information is accurate. Thousands of people access the advisory over the Internet, even more hear it on the radio and an average of 230 people call the avalanche recording each day.

Then, just when many people are eating their breakfast, we eat lunch. After lunch—or is it breakfast—there's never a lack of telephone calls to answer, reports to write, spreadsheets and web sites to update, computer projects and media contacts. Finally, we issue the detailed mountain weather forecast by about noon, then head home by 1:00 pm.

The National Weather Service: a very valuable partner.

We cannot sufficiently express the gratitude for our partnership with the National Weather Service (NWS). Larry Dunn (an avid backcountry skier in his free time) is the head of the NWS in Salt Lake City. The NWS provides office space, internet connections, space on the NWS computer server, as well as, most importantly, weather data and weather forecasting.

Since weather sculpts avalanche conditions, weather is obviously important in avalanche forecasting. Each morning the avalanche forecaster on duty speaks with the NWS lead forecaster on duty about current and upcoming weather. Then we use the state-of-the-art, NWS computers to refine the forecast for the mountains. Each morning, we serve as the intermediary and exchange a plethora of information back and forth between the NWS forecasters and all the avalanche workers in the mountains responsible for public safety.

We would like to thank all of the lead forecasters along with everyone else who works in "the Circle" at the NWS for providing such great info and being a pleasure to work with. Randy Weatherly, a computer programmer at the NWS, also deserves thanks for putting up with pesky questions from the UAC forecasting staff on computer issues. He is unfortunate enough to have an adjoining cubicle and he routinely provides simple fixes to everyday computer issues along with insight to computer programming languages.

Thanks again Larry, we look forward to working with you and your staff again next season.

Season Highlights

Three avalanche fatalities occurred during the 2007-08 season, which is slightly less than the average of 4 fatalities. This included two snowmobilers in the western Uinta Mountains and one in-bounds skier at the Canyons Resort. Eighty five people unintentionally triggered avalanches in the backcountry, of which 42 were caught, 15 were partly buried, 9 were injured and three were killed.

It was an epic winter. After a slow start, once it started snowing around Christmas, it hardly let up all season, leaving northern Utah with around 120 percent of normal snow. After very unstable conditions around Christmas through the first part of January, the snowpack remained quite stable and well-behaved for the rest of the season.

We received $122,000 in one-time funding from the Utah Legislature through Utah State Parks and Recreation to expand our avalanche outreach and education program. With these funds, we partnered with the Friends of the Utah Avalanche Center to teach additional avalanche classes, produce an avalanche awareness campaign that utilized billboards, public service announcements, stickers, brochures, web tutorials, web site development, three snowmobile trailers with avalanche awareness graphics, additional beacon practice sites, Are You Beeping signs at trailheads, education for over 200 search-and-rescue personnel from six different counties and extra personnel for doing outreach throughout Utah.

The Utah Avalanche Center remained in the news for most of the winter with over 76 media interviews including six appearances on national news programs.

New for the 2007-2008 Season

Additional outreach projects with one-time legislative funding for the 2007-08 Season:

Avalanche Education for Professionals

The additional monies we received this year from the Utah Legislature, through Utah State Parks, allowed us to present avalanche training to search and rescue groups from Wasatch, Toole, Davis, Duchesne, Utah and Weber counties and in addition, to Rocky Mountain Search and Rescue Dogs. Complementing our in-depth two-hour evening presentations developed specifically for our local professional rescue outfits, we also conduct all day field sessions with the group. While most of the information is a review for seasoned members, we begin the day by practicing and orienting with rescue equipment- beacons, shovels, and probes. We then segue into snowpack and terrain evaluation, culminating with a "mock" rescue at the end of the day. The development seminars have been received with tremendous appreciation and we hope to continue helping rescue groups with their training in the coming years.

New Snowmobile Trailers

The presence of UAC forecasters at popular trailheads provides a natural interface with the public, putting a name and face to staff members. We strive to connect with local user groups, especially snowmobilers, who at least nationally, lead the list in avalanche fatalities. This visibility draws attention to our services. This year we purchased two new enclosed snowmobile trailers, one for the western Uinta's another for Logan. Having them graphically enhanced with snowmobile pictures, sponsor logos and the UAC's new logo was key and the results spectacular. (The Manti-Skyline avalanche forecasting program had an existing trailer and we had graphics applied to it.) Every trailhead we visit, riders are attracted to the trailer to ask about avalanche conditions and we estimate we've made personal contacts to thousands of riders this year alone.

Additional "Are You Beeping?" Signs

Utilizing interpretive signage which catches people's attention and educates them at the same time is a challenge for any organization. Fortunately, additional monies this year helped us continue the very popular Are You Beeping campaign. The graphically enhanced signs are placed at popular trailheads statewide, giving vital information to all backcountry users. Key points such as where to find currant avalanche information, clues to unstable snow and the consequences of people's decision making are clearly illustrated in a bulleted, easy to read fashion. For non-motorized users we install a beacon box that amplifies the sound of an avalanche beacon as recreationists walk by, essentially checking to see if you're "beeping" or not. Unfortunately many motorized users wouldn't hear the signal emitted by the mounted box, so we simply integrate the signs at existing trailhead kiosks. In addition to six signs implemented last season, this year we installed ten new signs for both motorized and non-motorized users.

Public Service Announcements

For the second year in a row the UAC produced two, thirty second avalanche awareness public service announcements (PSA's). The PSA's aired for one month at Larry Miller theaters at Jordan Co-

mons, The Gateway, Thanksgiving Theaters and District Theaters and were viewed nearly one million times.

Highway Billboards

We partnered with Reagan Signs and developed a billboard campaign. In addition to two locations in Salt Lake City, four additional sites in crucial avalanche prone areas were chosen in Logan, Heber, Duchesne, and Price.

Additional Personnel

With the additional funds available for this year the Friends of the UAC was able to contract two more people to help with our outreach efforts. Paige Pagnucco in Logan and Grant Helgeson, previously with Backcountry.com in Salt Lake, were added to the staff for the second half of the season. They were a tremendous help in all of the projects that were implemented during the 07-08 season. Paige concentrated on outreach methods in the Logan area as well as helping with funding projects for the entire state. Grant gave numerous public avalanche talks, did backcountry field observations in the Uinta Mountains and used his marketing skills to help with fundraising as well.

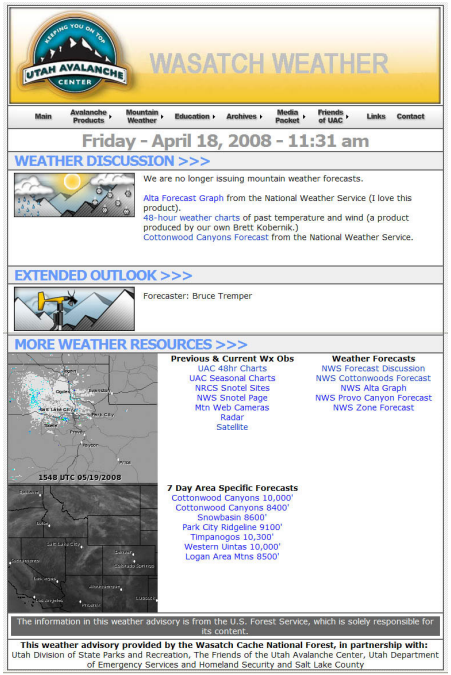
UAC Web Site Management System

Last but certainly not least the Friends of the UAC was able to start work on reorganizing and updating their web site which is the main source of information for the public. Originally scheduled to start in the Fall of 07, we quickly realized we would be biting off more then we could chew if we tried to implement the new system during the forecasting season. We decided to hold off until Spring of 08 to get started. We have partnered with Dharma Tech headed by Sarmeesha Reddy to work on this major revamping. We are very excited about the outcome. Stay tuned, we plan to unveil the new system in the Fall of 08.

Web Site Updates—Brett Kobernik continues to refine computer programming skills:

Logan, Uinta, Moab and the Manti Skyline update to the graphical advisory

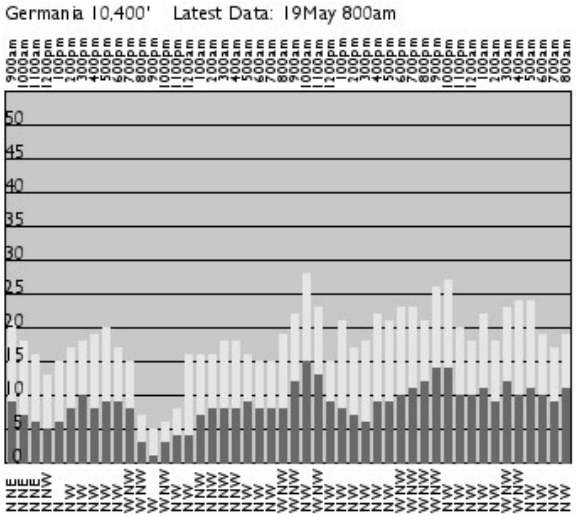
The successful and popular graphical daily avalanche advisory format was expanded to all of our areas that are producing advisories. Aside from the public getting more detailed and easier to digest information, the input method for the avalanche forecasters is much cleaner. We previously used Microsoft Word to produce a text only document then save it manually in different locations to produce the advisory and archive versions. A series of web based input forms connected to our database now provides a very streamline method for producing our advisories. A special thanks is in order to Chris Lundy of the Sawtooth Avalanche Center who set up the original input pages and coached Brett on their functions.



Updated Mountain Weather Web Page

We updated our mountain weather forecast web page that we

produce each day at noon. Again, we eliminated Microsoft Word and use a web based input system that stores the data in our database. The new mountain weather web page includes our same daily forecast plus small radar and satellite loops along with links to our favorite weather products. We plan to expand this web page format so each of our outlying areas will have one contoured to that area.



Automated Weather Charts

Using the PHP computer language along with some Unix functions on our web server, Brett produced a series of weather charts that automatically update themselves. The charts collect data from various mountain locations, process the data and produce easy to read charts.

The first series was a compilation of temperature, wind and snow measurements from the past 48 hour period. The purpose of these charts was to take data that previously was scrawled across dozens of web pages and condense it in chart form to only three pages. This was done mainly with the "avalanche forecaster on duty" in mind to speed up the morning routine.

The second series of charts are the seasonal weather history set (see Wasatch Season Summary). We've kept seasonal charts since the early 1990s to track snowpack structure since the weather is the architect of the snowpack. These were first produced by hand on graph paper, then electronically but manually using Excel spreadsheets and now automated on our web server. The new system runs itself each morning at 7am, collects weather readings from the past 24 hours, processes the data and stores it. Charts are then available for each month from the data. This saves the forecaster on duty around a half hour every day as all he or she has to do is check to make sure the data is correct. Both of the mentioned series of charts are also excellent products for intermediate and advanced backcountry users.

Partnerships & Sponsors

Thank you to everyone who contributed to make the Utah Avalanche Center possible.

Formal partners

State of Utah, Natural Resources - Division of Parks & Recreation
Friends of the Utah Avalanche Center
National Weather Service
Salt Lake County
Utah Department of Public Safety

Companies

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Snowbird Renaissance Center
FeedTheHabit.com
Wasatch Mountain Club
Xmission Internet
Tri City Performance
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At Your Leisure
Rocky Mountain Sledders
Weller's Recreation
Ski-doo
Big Pine Sports out of Fairview
Teton Gravity Research
John Errons Company

Individuals

Steven Borst
Bob Henderson
Lynne and Curtis Kennedy
The Byrne Family

UDOT Alta
UDOT Big Cottonwood
UDOT Provo
Wasatch Powderbird Guides

Professional Avalanche Workers

An enormous thanks to all the professional avalanche workers throughout the state, from the ski resorts, highways and guide services, for their mountain weather, snowpack and avalanche information. The consistency, accuracy and honesty of their information are invaluable, as is their availability for discussions. The great teamwork among avalanche professionals in Utah is an important factor in helping us produce more timely and accurate forecasts.

Alta Ski Area
Beaver Mountain
Brian Head Resort
Brighton Resort
Deer Valley Resort
Diamond Peaks
Exum Utah Mountain Adventures
Park City Mountain Resort
Powder Mountain
Snowbasin: A Sun Valley Resort
Snowbird Ski and Summer Resort
Solitude Mountain Resort
Sundance
The Canyons
UDOT Alta
UDOT Big Cottonwood Canyon
UDOT Provo Canyon
Wasatch Powderbird Guides
Park City Powdercats

The Friends of the Utah Avalanche Center Endowment

The FUAC Endowment is a newly formed donation and financial resource vehicle created by the FUAC to promote the long-term financial security of the Utah Avalanche Center. The FUAC Endowment seeks to raise a significant capital sum that will ultimately serve as a reliable and permanent financial resource on which the UAC can rely for decades. The Endowment is built by the generosity of the FUAC donors and corporate partners and is professionally managed currently by the Albion Financial Group. Endowment inquiries and donations can be directed to our partners the Friends of the Utah Avalanche Center OR Scott Martin at (801) 201-1668 or shm@scmlaw.com.

$1000+:
Snow, Christensen & Martineau
Dr. Robert G. and Susan Mossman

$500 - $999:
Barb Gander and Steve Keyser
Scott and Veronique Markewitz
Scott Martin and Rachel Sweet-Martin
Marc and Charlene Wangsgard

Wasatch Season Summary

By Drew Hardesty

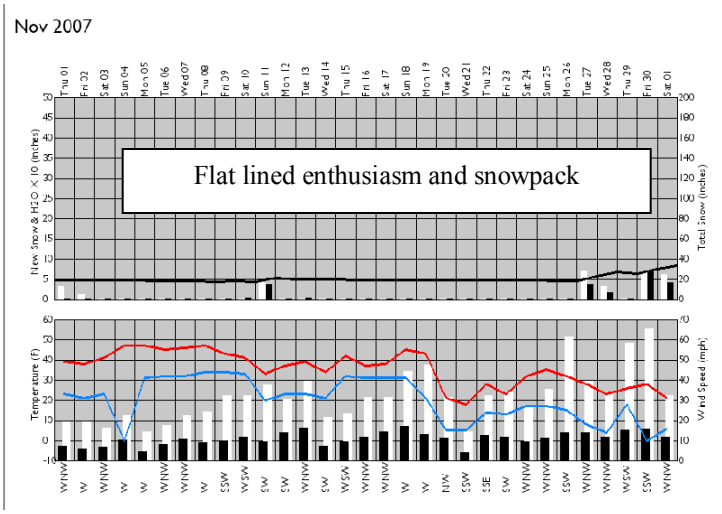
Cries of 'Viva La Nina' rang out in October with early season storms…..and despite most of us sitting around with the crickets chirping in November, the Wasatch again hit the jackpot with season totals of 600-700" in the Park City and Salt Lake mountains. After an unusually dry Indian summer month in November, few would have guessed that the Wasatch would have had such a snowy winter, much less reach 500" the fourth *earliest* in recorded history. A wet and stormy October got most of us licking our chops, but November's drought (see below) flat-lined the snowpack, our enthusiasm, and set up a good foundation of depth hoar that plagued us once the snow started to fly in December. With this dicey (see: Colorado) initial snowpack, 29 of our recorded 81 unintentionally triggered avalanches occurred in December alone, until the storms of January and February healed and strengthened the snowpack. By the end of January, the new incidents involved what we call storm snow avalanches that were quick to settle out. By our numbers, which are far from comprehensive (as not all incidents get reported), 42 backcountry recreationists were caught and carried, resulting in 15 full or partial burials, 9 sustained injuries, including 3 fatalities – one skier and two snowmobilers. Many of the storms hammered the valleys as well. It made for plenty of shoveling for the townies, but the mid and low elevation coverage was the best in years.

October (53"/5.09")

Nearly every weekend brought rain to the valleys and snow to the mountains. By month's end, Alta recorded 53" of snow with 5.09" of snow-water-equivalent. Southerly aspects remained thin, but the high northerly aspects provided mid-winter powder conditions for those anxious to pull their gear out of the closets and garages.

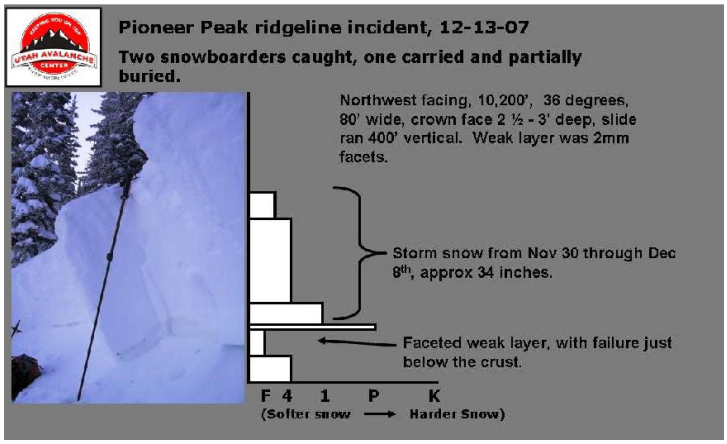
November (21.5"/1.58")

With only a couple of trace-days and a mighty 4½" storm on the 11th, we were on the verge of breaking the record for the driest November, set in '76-'77. Late month disturbances put us over the top, but it was little more than dust on crust and depth hoar on the northerlies, and dust on dirt on the sunny slopes. Early season hopes and anticipation were dashed and we at the forecast center looked upon the pre-existing snow with dread as October's base of 35-40" rotted down to less than 20" of unsupportable weak sugary faceted snow. The next significant snow storms would trigger the first avalanche cycles of the year.



December (147"/9.44")

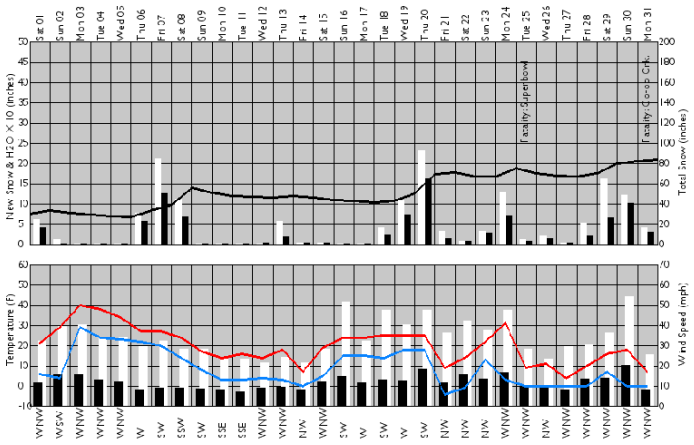
With this set up, it's not surprising that more than a third (29/81) of our unintentionally triggered avalanches and all of our fatalities occurred during this month. It finally started to snow (it snowed 21 of 31 days in the month), but it only provided the missing ingredient – a slab – for natural and tricky human triggered avalanches to keep even the cagey pros walking on eggshells in the high northerly terrain. Evelyn's accident crown line profile (right) reflects the 'upside-down' strong over weak structure that was ultimately responsible for much of the activity, including the three fatali-



ties the last week of the month.

The first fatality occurred on the 23rd, in-bounds at the Canyons resort and the storyline may be one of the more dramatic and emotional events that we've seen in a few years. What started with a tragic death of a man in his later 20's ended with the startling and miraculous recovery of a pulse-less 11 year old boy who had been com-pletely buried in the runout zone. (For more details, see Incidents and Accidents as well as our web site.) Two other men rec-reationally snowmobiling lost their lives in tragic accidents in the western Uinta Moun-tains, the first on Christmas day, the next on New Year's Eve.

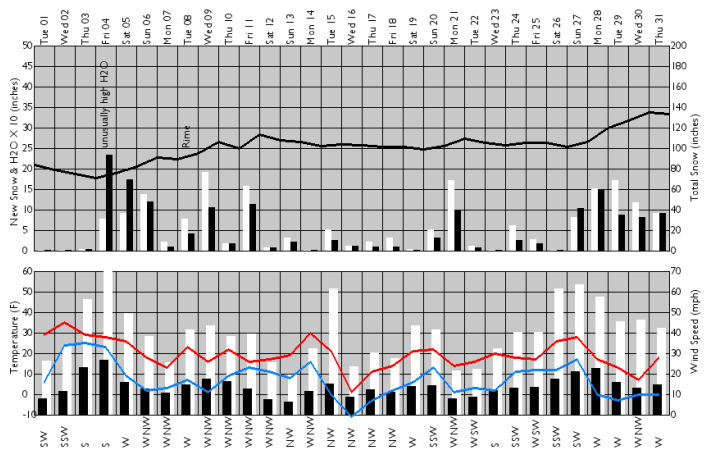
Dec 2007



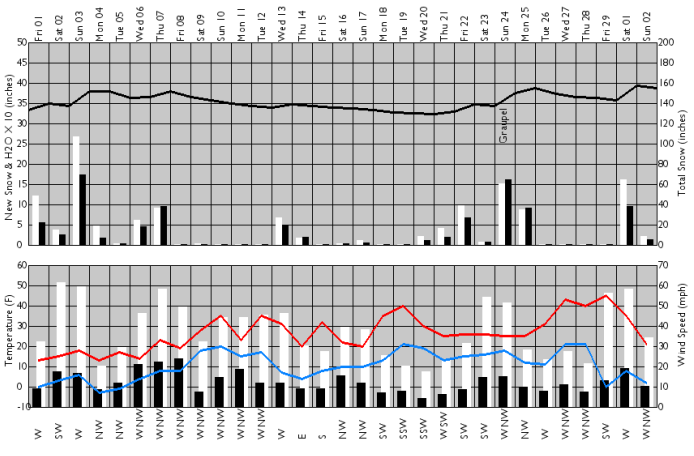
January (178.5"/15.43")

If we got back on track in December, the flood gates opened entirely in January. It was the 2nd snowiest January on record, compared to 94-95's trace-shy of 200". Water numbers of 15.43" handily broke the January record, and if not for the unusually high snow densities on the 21st and 29th, the snowfall record would have fallen as well. As you can tell from Kobernik's weather chart (right), it snowed on all but six days for the month. The dreaded January high pressure inversion never had a chance, and we more than made up for our weak No-vember precipitation. By this time, enough snow had fallen to strengthen our weak basal snow and except for a few isolated 'repeaters' from early season, accidents and near misses were mostly in 'new snow only' instabilities. From here on out, the ava-lanche problems would spike like an EKG monitor - in perfect lockstep with the storm, then settle out as quickly as it had arrived. This was not the case in the west-ern Uintas, a cold, windy high mountainous region that receives much less snow than the central Wasatch. Like their high, lacco-lithic cousins to the south - the La Sals and the Abajos - they are almost like a part of Colorado in appearance and elevation, and congenitally weak with a poor snowpack structure.

Jan 2008



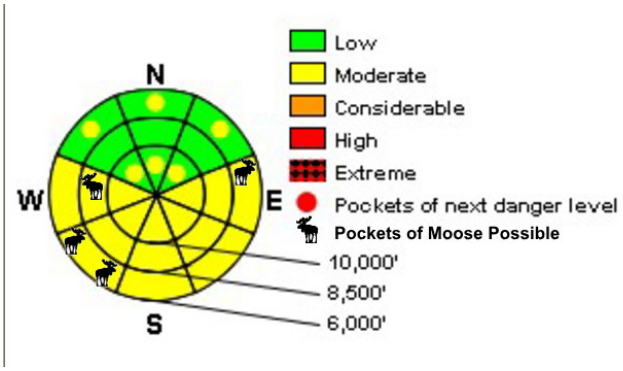
Feb 2008



February (116"/8.67")

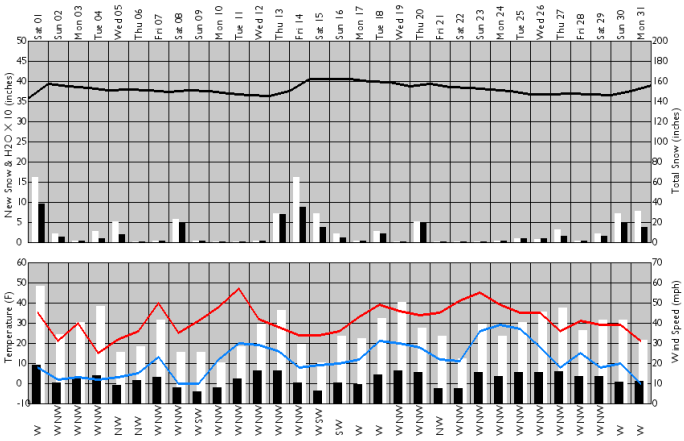
Storms raking the central and southern Wa-satch the first week of February kicked off

an impressive avalanche cycle, with many natural and explosive triggered avalanches crossing the closed canyon roads. Mid month saw some slowing in the deluge, but a 15" dump on the 24th pushed the season total past 500" for the year, the 4th earliest in recorded history. Not everyone was exactly thrilled with all the new snow, particularly at the lower elevations. Many of the deer, elk, and moose became even more stressed by the cold and snow, and often retreated to even lower elevations or onto the trails, leading to "negative encounters" with the skiing and riding public. We at the UAC would encourage folks to give the animals a wide berth when encountering them with the reminder that the ungulates and critters don't get to go "home" at the end of the day. One person gave us a good laugh when they e-mailed us an updated 'danger rose' to include moose (above right).



After our advisory mentioned several moose encounters, one cleaver person e-mailed us a danger rose including moose.

A higher sun angle and a few warmer days at the end of the month brought the first few wet avalanches into play on the steep sun-exposed slopes.

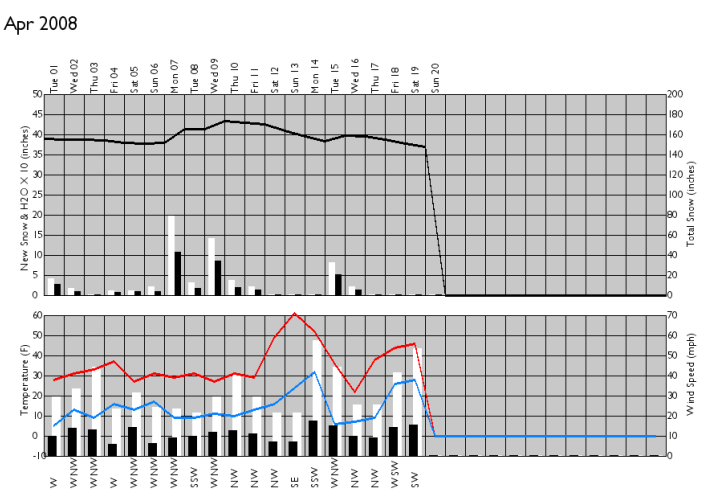


March (93"/5.72")

In last year's March report, I wrote, "This dry and radically warm March effectively placed an iron stake into the average backcountry enthusiast's heart." It was a far cry from the previous year's rapid fire transition from winter to summer, with few nights below freezing and many daytime highs in the 60's in the mountains. Again, what a difference a year makes. Snowfall continued into March, though by comparison, it was a dry month. Periods of high pressure allowed for the development of some surface hoar layers and faceting at and just below the surface of the snow. Four significant slides were triggered on this layering between the 14th and the 17th after nearly 2' of snow fell on this tenuous, if short-lived layer. Two of the slides were triggered remotely by very experienced ski tourers, with one athlete in her mid-50's taking a 50' ride. These tricky layers take a bit more investigation than on layers within the new snow. In the photo on the right, a visiting avalanche professional visiting from Oregon by way of Valdez, Alaska inspects some of the suspect layering.

A visiting avalanche professional from Oregon investigates the suspect layering

Temperatures remained cool through the month and we saw little of the wet activity from the year before.



April Fool's through the 16th: (61"/3.65")

Spring finally came by about mid-month, though the warming was not excessive, nor did we have much of what we call a 'layered snowpack' ripe for wet avalanching. Similar to our dry snow avalanching, the wet sluffs and the few wet slabs were confined to just any new snow layering. By mid-month, a few nights of above-freezing temperatures conspired with warm winds and balmy day-time highs to dampen and avalanche out many of the mid and low elevation northerly slopes. At this writing in late April, the upper elevation northerly slopes still hold some good recrystallized powder. The sunny aspects have been slow to develop a well-baked corn cycle. Perhaps May.

May (postscript)

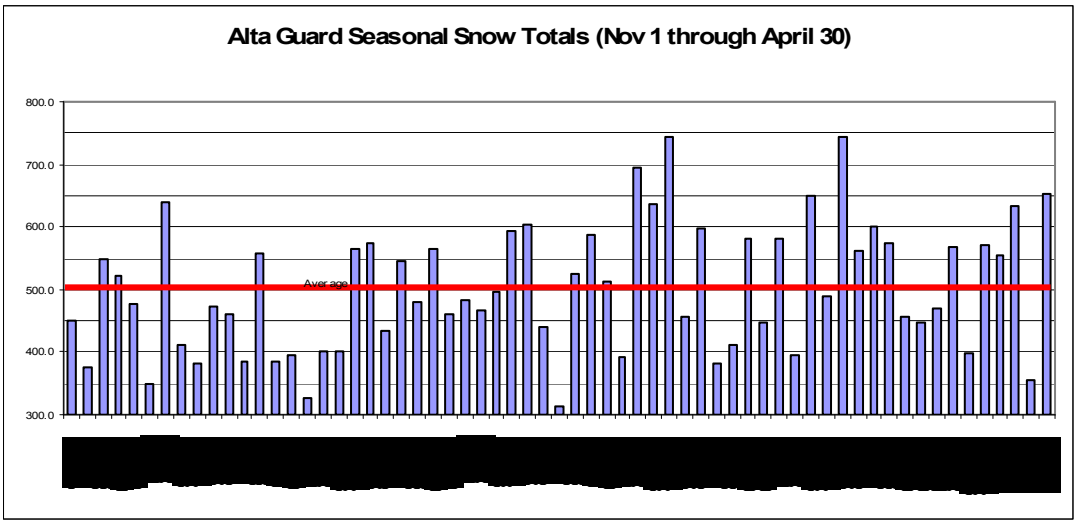
Although our money ran out and we ended our avalanche advisories for the season, the weather, somehow, missed the memo. The cold, wet spring continued with several more storms. The largest storm of the month, dumped a foot and a half of snow with over 2 inches of water weight in some areas. On May 23rd, Bruce Tremper, the last one of us still working, issued a "Special Avalanche Advisory" through the National Weather Service, which was the Friday before Memorial Day weekend. Sure enough, there were several close calls and some lost equipment as people triggered and took rides when the new snow became wet in the increasing temperatures and sun. We believe this is the latest avalanche advisory we have ever issued.

Snowfall at Alta Guard 1945- Present

Season	Year ending	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Total
1945-46	1946	109.0	83.0	84.5	50.0	69.0	55.5	451.0
1946-47	1947	69.0	63.0	61.0	53.0	68.0	60.0	374.0
1947-48	1948	118.0	80.0	46.0	66.0	165.0	74.0	549.0
1948-49	1949	71.0	160.0	132.0	58.0	97.0	5.0	523.0
1949-50	1950	39.0	137.0	133.0	34.0	109.0	25.0	477.0
1950-51	1951	60.0	66.0	112.0	58.0	53.0	0.0	349.0
1951-52	1952	67.0	156	115.0	105.0	163.0	35.0	641.0
1952-53	1953	44.0	65.0	112.0	40.0	93.0	57.0	411.0
1953-54	1954	50.0	107.0	54.0	57.0	101.0	14.0	383.0
1954-55	1955	37.0	53.0	134.0	129.0	60.0	59.0	472.0
1955-56	1956	86.0	112.0	103.0	72.0	33.0	54.0	460.0
1956-57	1957	36.0	50.0	86.0	41.0	97.0	76.0	386.0
1957-58	1958	74.0	79.5	83.5	131.5	80.0	111.0	559.5
1958-59	1959	38.0	47.5	81.0	107.0	84.5	28.0	386.0
1959-60	1960	22.0	39.5	59.0	155.0	92.0	28.0	395.5
1960-61	1961	75.0	40.0	1.0	62.0	113.0	35.0	326.0
1961-62	1962	46.0	82.5	86.0	110.0	35.0	42.0	401.5
1962-63	1963	31.0	17.0	85.0	39.0	93.0	136.0	401.0
1963-64	1964	55.0	53.0	108.0	68.0	**183.0**	99.0	566.0
1964-65	1965	95.0	141.0	150.0	66.0	44.0	77.0	573.0
1965-66	1966	69.0	69.0	73.0	103.0	70.0	49.0	433.0
1966-67	1967	53.0	84.0	168.0	72.0	61.0	106.0	544.0
1967-68	1968	22.0	131.0	39.0	84.0	70.0	133.5	479.5
1968-69	1969	87.5	132.6	113.0	148.0	35.0	50.0	566.1
1969-70	1970	56.0	70.0	103.5	60.5	79.0	90.0	459.0
1970-71	1971	79.0	142.0	58.0	73.5	87.0	42.0	481.5
1971-72	1972	64.5	159.0	94.5	45.0	47.0	56.6	466.6
1972-73	1973	----	122.0	64.5	77.0	124.0	109.0	496.5
1973-74	1974	90.9	128.2	104.5	91.0	45.0	136.0	595.6
1974-75	1975	25.5	146.5	104.0	88.0	151.0	90.0	605.0
1975-76	1976	94.0	67.0	74.5	69.0	93.0	42.0	439.5
1976-77	1977	13.5	17.0	50.5	73.5	129.0	31.0	314.5
1977-78	1978	53.0	106.5	99.5	92.5	85.0	88.0	524.5
1978-79	1979	62.5	96.0	78.5	86.0	71.0	94.0	588.0
1979-80	1980	79.5	27.0	143.0	112.5	123.0	29.0	514.0
1980-81	1981	40.0	34.0	73.0	82.0	110.0	52.0	391.0
1981-82	1982	47.0	184.0	143.0	85.0	164.0	73.0	696.0
1982-83	1983	66.0	165.0	75.5	68.0	150.0	112.5	637.0
1983-84	1984	143.5	**244.5**	42.0	104.0	85.0	124.5	743.5
1984-85	1985	112.5	105.0	44.0	61.5	99.5	34.5	457.0

Snowfall at Alta Guard 1945- Present

Season	Year ending	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Total
1985-86	1986	132.0	62.0	56.0	112.7	100.0	135.7	599.0
1986-87	1987	73.0	12.3	96.0	73.0	104.0	23.5	381.8
1987-88	1988	30.0	91.0	105.1	39.75	115.5	29.0	410.3
1988-89	1989	172.5	124.5	70.75	97.5	64.75	52.0	581.5
1989-90	1990	76.0	49.0	107.5	100.5	84.0	31.0	448.0
1990-91	1991	109.5	91.0	82.8	49.7	110.9	**136.3**	580.2
1991-92	1992	133.4	57.2	41.8	85	50.1	27.5	395.0
1992-93	1993	118.8	119.2	165.3	102.9	63.0	81.2	650.4
1993-94	1994	40.7	64.85	122.7	134.05	47.2	80.8	490.3
1994-95	1995	**205.9**	73.8	**199.7**	56.3	128.9	80.7	**745.4**
1995-96	1996	57	53	187	104	82	79	562
1996-97	1997	78.3	164.8	141.5	91	53.8	69.7	599.1
1997-98	1998	46.3	81.8	128.9	**156.6**	92.3	69	574.9
1998-99	1999	76.5	43.1	105.3	98	46.5	89	458.4
1999-00	2000	30.0	97.0	100.0	119.5	84.0	15.5	446.0
2000-01	2001	88.0	71.0	66.2	79.5	53.0	112.0	469.7
2001-02	2002	137	86.1	100.9	53.4	142.2	48.1	567.7
2002-03	2003	42	78.7	26	84.1	93.8	74.8	399.4
2003-04	2004	110	151	74.3	130	62	43.5	570.8
2004-05	2005	62.7	86.4	113.5	77.9	153.6	59.5	553.6
2005-06	2006	81	132	148	61.5	135	76	633.5
2006-07	2007	63	51.5	38.5	107	63.5	32.5	356
2007-08	2008	18	161	186	132	85	72	654
Average		**86.2**	**87.1**	**107.1**	**93.3**	**87.6**	**66.0**	**527.3**
Maximum		**205.9**	**164.8**	**199.7**	**156.6**	**153.6**	**136.3**	**745.4**
Year of Max		**94**	**83**	**95**	**97**	**64**	**91**	**95**



Western Uinta Season Summary

By Craig Gordon

The western Uinta avalanche forecast program, in its fifth successful winter, is supported through generous funding provided by the State of Utah's Natural Resources - Division of Parks & Recreation. Additional assistance comes from a whole host of valuable partners such as the Kamas, Heber and Evanston Ranger Districts who supply personnel, vehicles and in-kind support. Since the inception of the Uinta program, the Kamas Ranger District has played a key role and we've been fortunate to have the support of District Ranger Kathy Kahlow. In addition, Dave Ream a former Alta ski patrolman and snow ranger, assisted me as a field partner. Unfortunately, Dave's appointment changed and he's relocated to Salt Lake. However, in Dave's absence the Evanston Ranger District once again stepped up to the plate, helping to spread the avalanche safety message to rural users. Under the guidance of Steve Ryberg and Rick Schuler, we've been very fortunate to have Ted Scroggin helping to reach out to users. Ted's outstanding snow and avalanche observations are first rate and he's also teaching basic avalanche classes and arranging avalanche awareness presentations for local middle and high school aged students.

In addition to forecasting, I regularly teach close to 50 avalanche awareness classes each winter and this year was no different. Recognizing the need for help, the Friends of the UAC hired a much needed assistant who helped with education, outreach projects and assisted as a field partner in the vast terrain the western Uinta's offers. Grant Helgeson, a young energetic avalanche professional fit the bill and helped share the work load from late February through April.

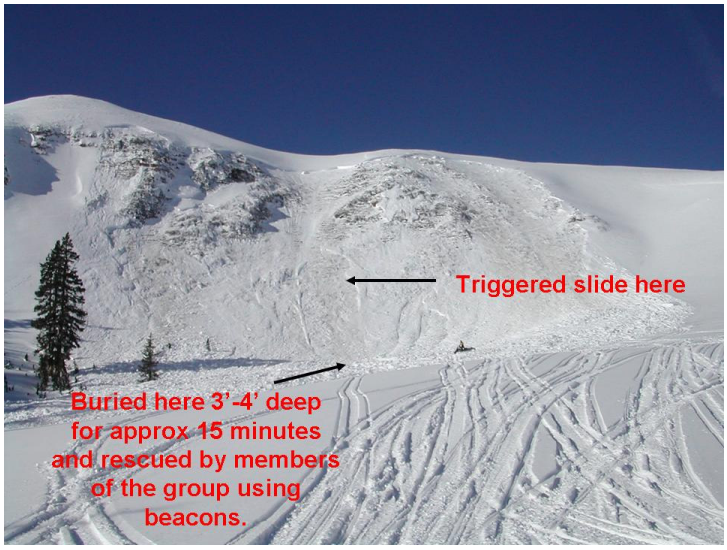
Tri-City Performance and Polaris

Walking the walk is critical to gaining credibility with any given user group, so naturally riding a state-of-the-art snowmobile gives us integrity with riders. For the third straight year, the fruitful partnership between the Friends of the UAC and Tri-City Performance continued and we received another "loaner" snowmobile, a new Polaris RMK 600. Without this sled it would be impossible for us to perform our duties and both Tri-City and Polaris are helping the avalanche center save lives through this extremely critical partnership. We're excited by yet another new partnership and this one has a local connection with western Uinta users. Weller's Recreation located in the Kamas valley, is a well respected snowmobile dealer with decades of experience. This season, Paul Weller and Ski-Doo offered to form a cooperative with the avalanche center by providing a snowmobile utilizing a program similar to Tri-City's. A second sled not only allows Craig to have a partner, but also shows the commitment both Weller's and Ski-Doo has to helping keep riders safe by pro-

Weller's Recreation and Ski-Doo

moting proactive avalanche awareness.

Not unlike our western neighbors the Wasatch, winter began early in the Uinta's with an encouragingly wet weather pattern beginning in mid October. Unfortunately, the storm track shifted, leaving us high and dry in November and for a good portion of December too. Weak shallow snow is a common theme in the western Uintas, especially early in the winter, but this season's snowpack was much different and more complex than we've seen since the program began in the winter of 2003-04. I knew the range was susceptible to dangerous avalanches and warned of the unusual snowpack through my advisories beginning with general information updates beginning in November. The first few weeks of December brought hit and miss storms and the first avalanche warning of the season on December 8th, but in general snow depths remained too shallow for riders to venture off packed roads. Storms missed the range through the middle portion of the month and cold temperatures continued to weaken the already structurally challenged snowpack. Another avalanche warning was issued on the 21st as a strong system coupled with raging winds battered the region. Two large, unintentionally human triggered avalanches on the 22nd were an omen of things to come. Christmas Eve ushered in strong southwesterly winds and about 8" of light density snow leading to a HIGH avalanche danger on the 25th. Unfortunately a day of celebration turned to tragedy as a very experienced snowmobiler triggered and was killed in a large slide while out for an afternoon ride in Super Bowl, near Windy Peak. The avalanche averaged 4' deep, was close to 1000' wide and ran for 400' vertically. The 53 year old man was buried about three feet deep and was not wearing an avalanche beacon. His body was recovered by Summit County Search and Rescue.



More human triggered avalanches on similar slopes ensued in days following this tragic event and in less than a week, yet another fatality occurred. A very strong storm with hurricane force winds gusting into the 80's and snowfall rates of 2" per hour slammed the western Uintas, prompting an Avalanche Warning on the 30th. We utilized local media contacts to spread the word of the inherently dangerous conditions and continued a Special Avalanche Advisory warning travelers of the enhanced risk in the western Uintas. Unfortunately on New Years Day, another snowmobiler triggered a large and deadly hard slab avalanche on a steep, heavily wind loaded slope near the Co-op Creek Trailhead This avalanche was 4'-5' deep, 450' wide, running 500' vertically. It was no surprise the avalanche failed on old, weak October snow near the ground. While the survivors had shovels and probes, no one wore avalanche beacons making for a nearly impossible live rescue. The victim, a 40 year old male from Altamont was recovered by his fellow riders, just as outside rescue consisting mostly of Wasatch County Search and Rescue personnel arrived.

The fragile snowpack hardly gained strength for most of the month of January, teetering on the edge with each additional storm or wind event. Natural avalanches on January 4th led to yet another Avalanche Warning as a powerful system moved into the region. Limited visibility throughout the storm, didn't allow us to get a good handle on avalanche activity, but as weather cleared we realized a widespread natural avalanche cycle took place. By the second week of January the snowpack was at a cross-

roads—a mid life crisis of sorts—slowly adjusted to all the added weight of recent storms and although it was done avalanching naturally, it now waited for a trigger to come along and tip the scales. Strong southwesterly winds led to yet another dangerously large, human triggered avalanche; this one though had a happy ending. A snowmobiler triggered and was caught and buried for nearly 15 minutes in a slide on the northeast facing slope of Race Track Bowl near what seemed to be the epicenter of human triggered slides- the Co-op Trailhead. Fortunately, the rider's companions all had rescue gear and found him and initiated CPR. Within a few minutes, the man began breathing on his own and other than a shoulder injury, came out relatively unscathed.

January was an active month for human triggered avalanches. Along with a triple burial during the middle of the month, several large pockety slides were triggered on steep wind loaded slopes throughout the range.

Strong winds and a couple feet of snow ushered February in and more avalanches followed. Fortunately though for the first time, the snowpack showed signs of strengthening and avalanches ran within the new storm snow rather than breaking into old snow near the ground. By mid February, warmer days and a deeper snowpack led to an overall strengthening trend and my colleagues and I felt we were finally turning the corner towards a more stable snowpack.

While March was a relatively quiet month, several storms left very light density snow in their wake which weakened considerably with the unusually cold weather pattern overhead. Winds were burly on the 14th creating cohesive slabs, leading to several unintentionally human triggered slides which broke into weak March surface snow. More wind on the 21st led to a very close call the following day on Double Hill in the Whitney Basin. A snowmobiler triggered a 4' deep x 450' wide hard slab, taking a body bruising ride, but came out unharmed. Small storms continued through the end of the month, creating mostly manageable new snow avalanche concerns.

The cold snowpack got its first taste of spring on April 4th as strong sunshine and warm temperatures created a few natural wet avalanches, but in general the snowpack remained well behaved. April can be a fickle month for both weather and for rider enthusiasm and this one was no different. With the deepest snowpack in years, people just lost interest towards the middle of the month. We issued our last advisory on Sunday April 13th, followed by a year end summary, giving riders some basic pointers to help them out during the advisories absence.

Salt Lake Snowmobile Club

Season Highlights

This season we organized three separate fundraisers, and the Friends of the Utah Avalanche Center raised nearly $11,000 to support the outreach efforts in the western Uinta's. Two movie premiers, one at The Edge Motorsports and the other at Brewvies were tremendous hits, featuring both the latest movies from Boondockers and Thunderstruck along with team athletes. In addition, the second annual avalanche ride was a huge success with nearly 100 participants. Pro riders from Boon-

dockers and Thunderstruck were again on hand to help out. The dedicated efforts of Rocky Mountain Sledders and in particular, Pam Madsen, made it all happen and we're extremely grateful for all their hard work. Proceeds will go towards purchasing new weather instrumentation whose data will available to the public via the internet. Installation is slated for next fall.

This season with the help of the Salt Lake Valley Snowmobile Club, we reinstalled the very popular Beacon Basin training site at the Nobletts Trailhead. In addition, funds from both legislative monies and fundraisers went to purchase another beacon training facility for the Evanston side of the range and we plan to have that up and running next season.

We also adopted a graphic forecast format which was a huge hit among users, making currant avalanche information more digestible and vivid. Just a few years ago avalanche observations, reports of incidents and close calls where a rarity. This year however, pictures and information flooded our inboxes and this added information helped us issue more precise advisories.

Logan Season Summary

By Toby Weed

With exception of the beginning, the winter of 2007-2008 turned out to be an excellent powder year in the mountains around Logan. The season was characterized by a deep and generally stable snowpack and relatively few large slab avalanches in the backcountry. The snow season started slowly, with only shallow accumulations and riding only possible on a few smooth slopes at upper elevations through November and well into December. Much anticipated snowfall began in earnest the week before Christmas, and productive storms continued regularly throughout the remainder of the season. Even as I write this in the beginning of May, snow is falling and a few inches of fluff already fell on my lawn in town at 4500' in elevation. For May, we've got fantastic coverage and great accessibility from numerous trailheads across the region.

The slow start to the powder season, with very little snow on the ground in November and December, was reflected in poor attendance at my first few free avalanche awareness talks and caused the cancellation or rescheduling of a couple classes. But, thanks to help from Paige Pagnucco, who was contracted by the Friends of the Utah Avalanche Center in late January, we made great progress with our outreach and education efforts in the second half of this season. We presented several well attended awareness talks and classes. We also tried a slightly more direct outreach approach, reaching hundreds of the most targeted community by keeping a presence at popular snowmobile trailheads at busy times, directly contacting riders as they departed for or returned from ventures into avalanche terrain. Our new, snazzy 14' logo-covered trailer helped to draw attention, and we were able to both preach avalanche safety and attain valuable backcountry avalanche observations. To assist in this approach, we designed business-sized awareness cards to hand out to people contacted in the field or at the trailheads.

While Paige took the reigns on the outreach and business end of things, I was freed up to concentrate on in-the-field snowpack evaluation and avalanche forecasting. Throughout the season, in addition to updating the danger rating daily, I issued morning advisories on Mondays, Wednesdays, Fridays, and Saturdays, with additional updates when I felt conditions warranted.

The early season shallow snowpack and resulting faceting led up to the most dangerous conditions of the season and some significant natural avalanches at upper elevations. Slabs began forming with a windy storm on December 18th and by the 20th nearly 3 inches of water accumulated at the Tony Grove Snotel. Clearing on the morning of December 21st revealed evidence of several large natural hard slab releases at upper elevations in the Central Bear River Range. In early January, our trailhead outreach efforts paid off with direct, although late reports of large triggered avalanches. Twice, several days after the events, folks I approached as they loaded their custom sleds into spacious trailers told scary tales of near misses and triggering huge hard slab avalanches in the popular Rodeo Grounds and Cornice Ridge areas in the days just before and after Christmas.

Snowfall continued steadily through January piling up deeply on slopes that had no previous snow cover and compressing the faceted snow into the terrain on slopes that did. My worries of deep slab releases diminished as the snow piled up deeper and deeper, and by the third week in January mid-elevation test pits to the ground were 6 to 8 feet deep. Avalanche activity picked up again at the end of the month, with a few near surface or upper mid-pack weak layers and windy storms. Unintentional human triggered slides occurred on the 24th, 26th, and 27th, and then widespread naturals on the 31st.

Thin upper pack weaknesses lead to perilous backcountry conditions in early February, with significant

skier triggered avalanches on the 1st above the mouth of Green Canyon and on the 2nd in the popular Garden City/Swan Flats area. Spread over the next few days, large naturals occurred on the eastern slopes of the Wellsville Range, with several major paths producing large slides running full-length. Strong winds caused slab avalanche problems at lower elevations in mid-February, and someone probably triggered a large hard slab on the bench above the town of Richmond on around the 9th, stacking large chunks of debris into the town's irrigation canal. On the 13th, a Cache County Sheriff reported that the path above the mouth of Green Canyon naturally repeated; running around 1100' and carrying woody debris to the flats within a few feet of the popular trailhead access road.

With just a few exceptions, the remainder of February and the first half of March were fairly quiet. March brought regular storms and a few near surface weak layers that formed at the interface between warm old snow and wind drifted new. Most avalanches involved a layer of graupel. Traveling on snowmobiles on the last field day with a small Avalanche Fundamentals class on March 22nd, we viewed evidence of one such nice fresh natural wind slab on the east side of Naomi Peak. A few minutes after examining it, we encountered another recently triggered, unreported, avalanche in the vicinity with fresh snowmobile tracks nearby and old tracks in the bed surface.

Spring held off through much of April, with new storms and good powder every few days. Regular avalanche cycles became fairly predictable; wind slabs in the later stages and right after storms but sometimes lingering, and then loose wet avalanches when solar heating warmed the fresh snow. On April 15th strong south winds stirred up desert dust and wildland fire ash and deposited it across the region, turning the mountain snow a strange brownish color. A storm on the 24th dropped more than a foot of snow at upper elevations, and I issued my last weekend advisory on the 25th stating, "*(It's)* Always good to respect and avoid steep slopes with saturated new snow, as wet avalanches can entrain lots of heavy snow quickly." The very next day on the 26th, a 32-year-old mother of three on a snowboard triggered a small wet slide on the very steep slopes on the west side of Tony Grove Lake and was then carried into trees below and injured.

"One at a time" A good lesson for Jade on the second field day of our Avalanche Fundamentals Class… To satisfy our curiosity and to gain as much knowledge as possible we made our way to a safe area with a view of the large debris pile. While the rest of the class watched, I sent each one-at-a-time, to survey the slide by riding their sleds up onto the toe. In learning about avalanche safety, there is no substitute for direct experience… 3/22/08

Incidents and Accidents

By Drew Hardesty

In Utah, we live in what we call an "intermountain climate", which means that we usually experience a climate in between the wet, warm, deep and stable snow that occurs in Maritime climates near the oceans and the thin, dry, cold, shallow and persistently unstable snow in Continental climates such as Colorado. What does this have to do with avalanches? Everything. Near continuous snowfall and deep snow in Maritime climates tend to keep the avalanche problems in lockstep with the storms. Instabilities are quick to settle out. Lean years and/or significant hiatuses between storms tend to make for trickery: instabilities in the resulting Continental climates notoriously persistent and can plague the backcountry through winter and spring.

This is how things played out: October's 53 inches of snow rotted throughout most of November's drought, which, in turn, created a tricky December when it finally decided to snow again. Looking back, it is not surprising that more than a third of our unintentionally triggered avalanches in the backcountry occurred during the month of December, with all three of our fatalities occurring the last week of the month. It may have been grace alone that prevented a quintuple fatality on December 13th, with five out of bounds skiers and boarders caught in two separate slides – one in Hidden Canyon to the north, and one off the Pioneer ridgeline to the southwest. By our numbers, which are far from comprehensive (as not all incidents get reported), 85 people unintentionally triggered avalanches in the backcountry, 42 backcountry recreationists were caught and carried, resulting in 15 full or partial burials, 9 sustained injuries, including 3 fatalities – one inbounds skier and two snowmobilers.

Weather History for the two incidents on December 13th:

Brighton, in the upper reaches of Big Cottonwood canyon, received 47" in a storm that lasted from December 6th through the 8th. This snow came in on top of some very weak faceted snow from the early season storms in October. Winds had been generally light with a few hours of easterly winds earlier in the week producing some wind damage and loading along the higher elevations. Temperatures had remained cold since the storms with an overnight low of -2F the morning of the accidents.

12-13-07 Hidden Canyon – Two snowboarders caught and carried, with one sustaining head and face trauma

Six snowboarders, all men in their mid-twenties, entered the Hidden Canyon side-country of Brighton looking for fresh powder. After a quick scout, the first snowboarder center-punched a steep chute without incident, and, per good protocol, got out of the way at the bottom. The next snowboarder made two turns before triggering the hard slab that propagated 30' above him, engulfing him and one of companions above. Both men rode the wave 700' down the chute, with the second man sustaining an orbital fracture, a hairline jaw fracture and numerous facial lacerations and abrasions. Neither was deeply buried and the entire party was able to walk back out to the road.

The avalanche measured 1-2' deep and about 100' wide, running 700' vertically into the flats below. Hidden Canyon is a common destination for those seeking fresh tracks in an out of bounds environment. It is littered with steep chutes, cliff bands, and dense trees, but often holds good riding conditions with a relatively easy access back to the lifts at Brighton. The incident occurred only four days after the Utah Avalanche Center had issued a weekend-long 'Avalanche Watch', with a Considerable to High danger forecasted for steep mid and upper elevation northwest through northeast facing slopes. On the day of the incident, the danger was rated as Moderate, but the forecaster warned that dangerous avalanches could still be triggered in this type of terrain.

12-13-07 Pioneer Ridge Accident – Snowboarder caught, carried, and partially buried

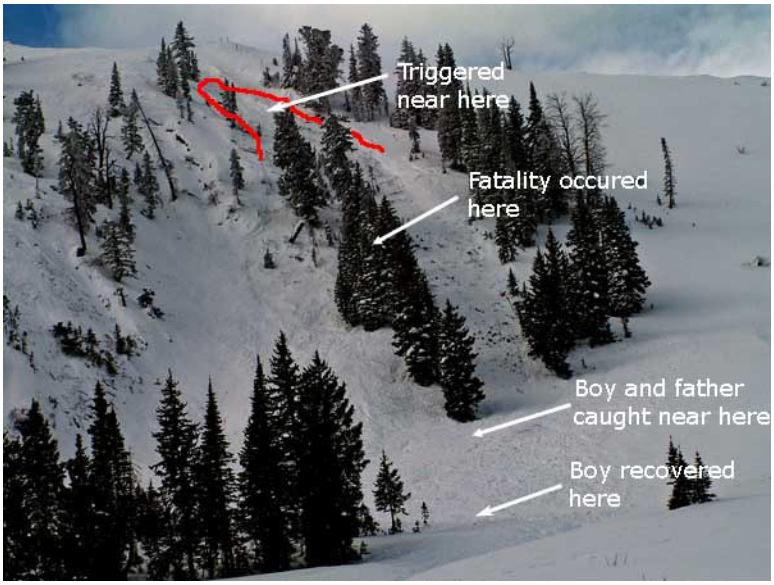
A party of three snowboarders spent the morning boarding at Brighton Ski resort, then rode up Crest lift and hiked out the Pioneer gate into the backcountry. None was equipped with a beacon or shovel. After digging a quick hand pit, they regrouped above a steeper break over. The first person dropped in 5 or 6 turns when the slope broke out under all three of them. One escaped off to the left, another was caught but stopped himself above a tree, and the third went for the full ride, approximately 400 vertical feet.

The victim had one hand partially free and was attempting to clear his face when his partner arrived to dig him out. This popular terrain is accessed through a well signed backcountry gate at the top of Brighton's Crest lift. The gate was opened for the first time that season only five days before and the area was only lightly tracked. The slope steepness at the crown face was about 36 degrees, and the crown face was 2 ½ to 3' deep. The slide measured about 80' wide, and ran approximately 400 vertical.

The three boarders had some avalanche knowledge, but just did not quite put the pieces together that day. They owned and had practiced with their beacons and shovels, but did not take them that day. They had also attended several avalanche awareness talks. With this near miss having a good outcome, it could be considered a good learning experience.

12-23-07 Fatality and then Miraculous Rescue of a Completely Buried 11 year old boy at the Canyons Resort

Two men descending upper Red Pine Chute inbounds at the Canyons resort triggered a hard slab avalanche despite being controlled by 200 pounds of explosives the day before. One man was caught and carried, then ended up on top. The other man was caught, hit a tree in the lower track, and died of head trauma. A man and a child below were engulfed by the flowing debris. The father was partially buried and looked on helplessly as his eleven year old son was completely buried. The ski patrol arrived and preformed an outstanding rescue using volunteers on the scene including three young adults who had previously attended one of our Know Before You Go avalanche awareness programs. Within minutes, a probe strike by a 15 year old girl found the boy, and he was soon excavated from the debris with no pulse or respirations. CPR was begun immediately, and the boy was breathing on his own by the time he was loaded into the air ambulance. The slide averaged 3 to 4' deep, up to 5' in places, and ran approximately 600 vertical feet.



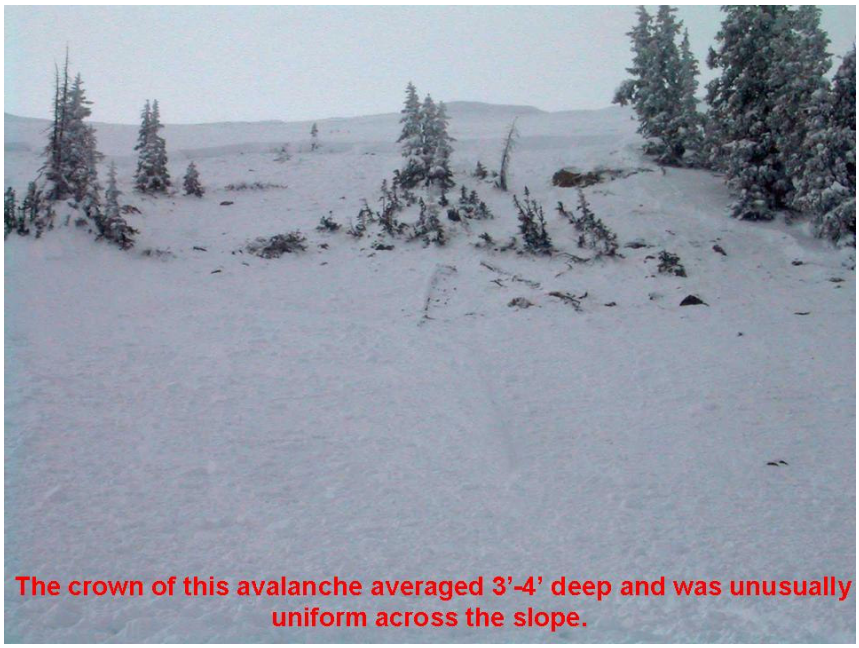
We should note that avalanche fatalities on open runs inside of ski area boundaries are extremely rare. Ski patrollers routinely knock down avalanches with explosives each morning before the public arrive, which makes ski areas extremely safe places to recreate. In fact, statistically, someone has a 100 times more chance of getting killed by lightning in Utah than being killed by an avalanche on an open run at a ski area or on a highway.

This fatality at a ski area is very unusual but it goes to show that even the state-of-the-art avalanche control practiced at the Canyons can not prevent all accidents.

12-25-07 Snowmobiler caught, buried and killed in avalanche near Windy Peak in the Western Uintas

A group of six male snowmobilers left the Smith-Moorehouse trailhead, near 1000 Peaks Ranch for an afternoon Christmas ride. There's conflicting stories as to how the victim became buried, but at approximately 15:30 a phone call to 911 was placed and a search ensued. A Summit County Search and Rescue team found the man two hours later with an organized probe line. He was not wearing a beacon, but some members in his party had beacons, shovels and probes. The avalanche was 3-4' deep, 1000' wide and ran approximately 350'-400' vertically. This slide failed at the ground on a depth hoar/ melt-freeze crust interface, developed in October. A vigorous storm system on the 21st stacked up 16" of snow and the avalanche advisory posted on Dec. 25th called for an overall CONSIDERABLE avalanche danger on steep, upper elevation slopes and specifically mentioned there were pockets of HIGH danger.

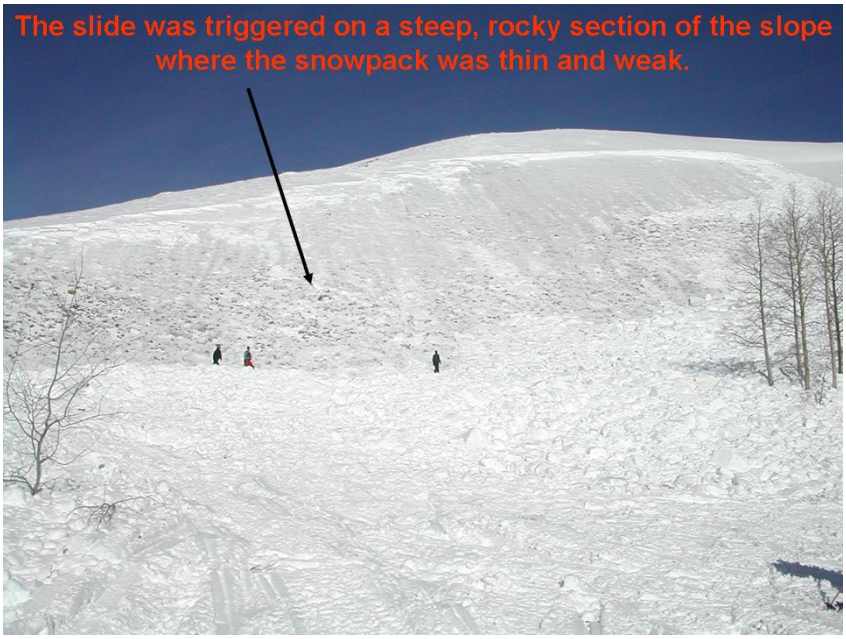
A typical thin, weak snowpack in the western Uinta Mountains in the early season. After the avalanche fractured within the weak, sugary depth hoar near the ground, you can see the ground showing through on the bed surface. These kinds of avalanches are extremely dangerous because they are persistently unstable and they tend to break wide and large, often creating un-survivable avalanches. In combination with powder fever, which runs high in the early winter, this is a dangerous combination.



The Windy Ridge avalanche in the western Uinta Mountains showing the crown fracture.

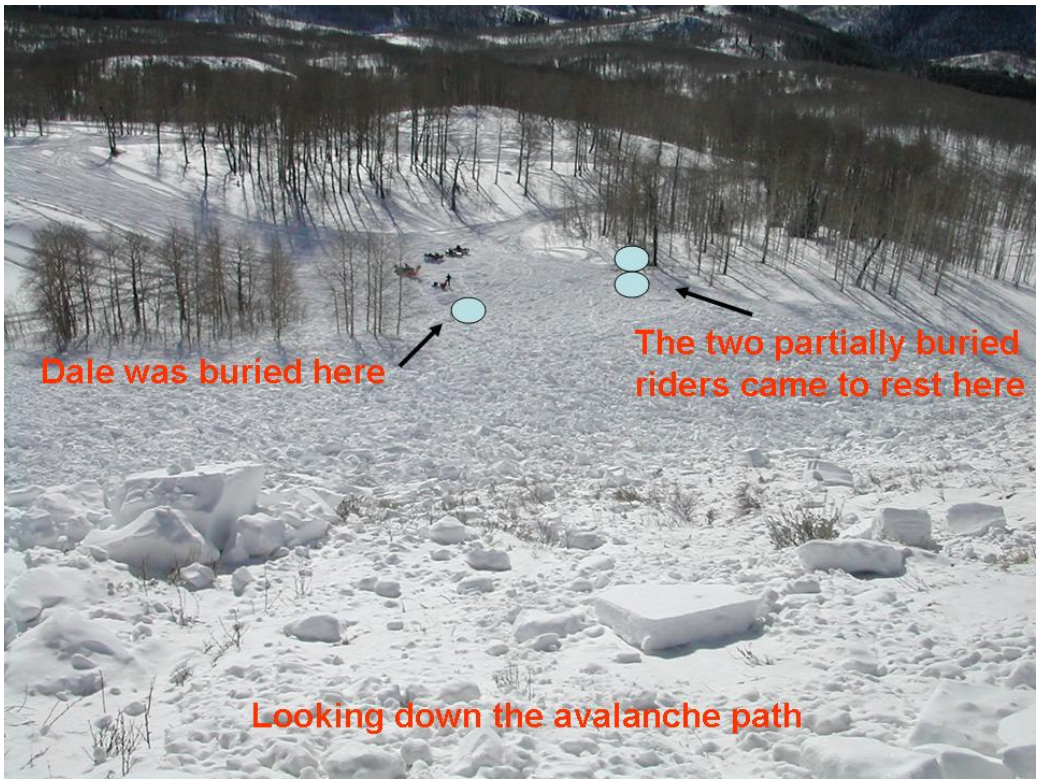
12-31-07 Snowmobiler caught, buried and killed in avalanche near Co-op Creek in the Western Uintas

Three experienced snowmobilers were riding in the area when one rider's sled malfunctioned as he approached the lower section of a steep slope. The weight of the rider and sled collapsed the slope and soon an avalanche broke well above the stuck rider, quickly engulfing all three men. One was partially buried, one was buried with just a hand and foot sticking out of the snow, and one was buried three feet deep. No one in the group was wearing an avalanche beacon, but the victim was found with probes and shovels. The avalanche was 4'-5' deep and 400'-500' wide. A Special Avalanche Advisory was in effect to warn the public of the avalanche danger and most of our local media contacts advertised the increased danger for the western Uintas.



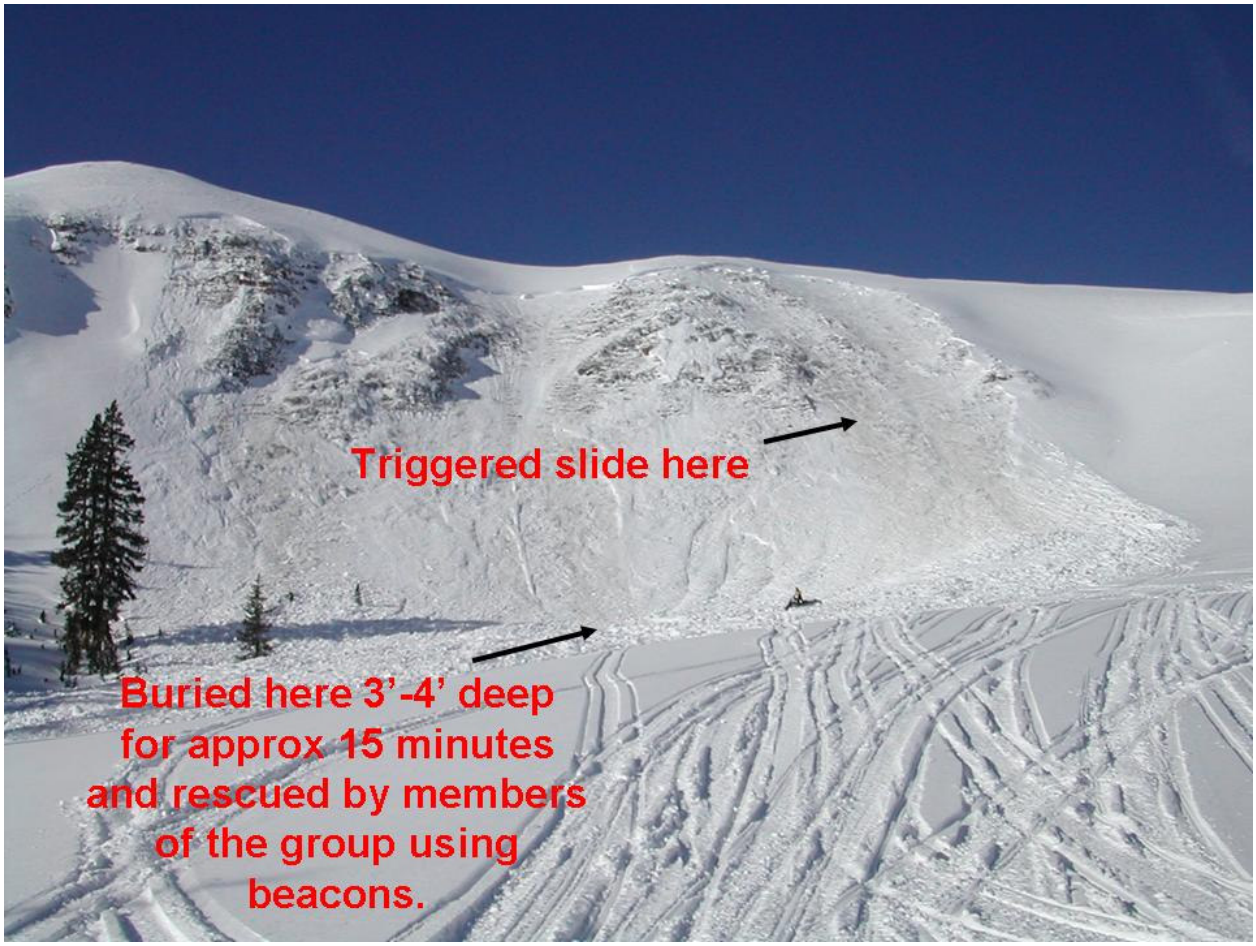
The avalanche responsible for the fatality in Co-op Creek in the western Uinta Mountains was almost identical to the one a few days earlier in that depth hoar near the ground fractured, sending a large, overlying slab cascading down the mountain. These avalanches can easily be triggered near the bottom of the slope.

Two additional views of the avalanche in Co-op Creek of the western Uinta Mountains.



1-13-08 Snowmobiler caught, buried and recovered alive in avalanche near Co-op Creek in the Western Uintas

A snowmobiler triggered a large, dangerous avalanche Sunday, Jan.13th on Race Track Bowl. The slide was 3 to 4 feet deep, 500 feet wide, running about 450 feet vertically. One rider was caught and buried. He was wearing an avalanche beacon and his group found him in about 15 minutes. A text book rescue followed, resulting in a happy ending. The weak layer was once again the notorious faceted snow that formed during November.



4-26-08 Tony Grove Lake Accident – Snowboarder caught, carried and injured in a wet avalanche above Tony Grove in the Bear River Range near Logan

A 32-year-old woman was injured after she triggered a loose wet avalanche and carried into trees below. She and her husband used a snowmobile to access the Tony Grove Lake Area. They were taking turns shuttling the sled, filming, and riding the short but extremely steep slopes directly north and west of the Lake. Just before her accident, her husband triggered a small wet avalanche that harmlessly followed him down the slope. Later, with the husband at the camera, she dropped into the line, and triggered a small wet avalanche. The shallow but heavy snow picked up speed and overwhelmed her, knocking her through some trees, where she sustained a number of broken bones and bruises. She was air-evacuated to the local hospital and is expected to fully recover.

The small wet avalanche started the width of a snowboard turn and fanned out to 70' wide and a foot

deep. Solar warming caused the newly deposited snow to melt and become slushy and sticky – conditions ripe for avalanching. This case shows that even the little ones can hurt you in the wrong terrain. They carried proper avalanche rescue equipment, and used safe travel protocols by only exposing one at a time to avalanche danger. Clearly, the snowboarder underestimated the speed and force of the heavy snow in the small wet avalanche it should be a reminder that one way avalanches kill is traumatically.

In summary, instabilities were acute in the early season when snow started to overload buried weak layers of depth hoar near the ground. This was a snowmobiler-triggered avalanches in the western Uinta Mountains on Tower Mountain during mid December. Here, forecaster Craig Gordon's snowmobile is parked at the bottom as he investigates the avalanche. It appears that no one was caught. But it was a precursor to the problems to come in the next couple weeks.

Backcountry Avalanche List - Wasatch and Uinta Mountains 2007-08

This is a list of backcountry avalanches either observed or reported to the Forest Service Utah Avalanche Center. It is certainly not an inclusive list. This information comes from a variety of sources. Thus we cannot vouch for the accuracy of these reports. We update this list usually by mid morning. For a daily 6:00 am report of yesterday's avalanche activity, call 888-999-4019x8. To report avalanche activity please leave us a message at 1-800-662-4140 or 801-524-5304. Or send emails to uac@avalanche.org. Fax 801-524-6301. **We keep all identities confidential.** Many locations names come from standard USGS 7.5 minute topographic maps. www.topozone.com is a great resource.

Color Codes:

Natural Trigger

Unintentional Human Trigger

Intentional Human Trigger

Region Codes:

SLC - Salt Lake Area Mountains
Ogden - Ogden Area Mountains
PC - Park City Area Mountains
Uintas - Uinta Mountains
Provo - Provo Area Mountains
Logan - Logan Area Mountains

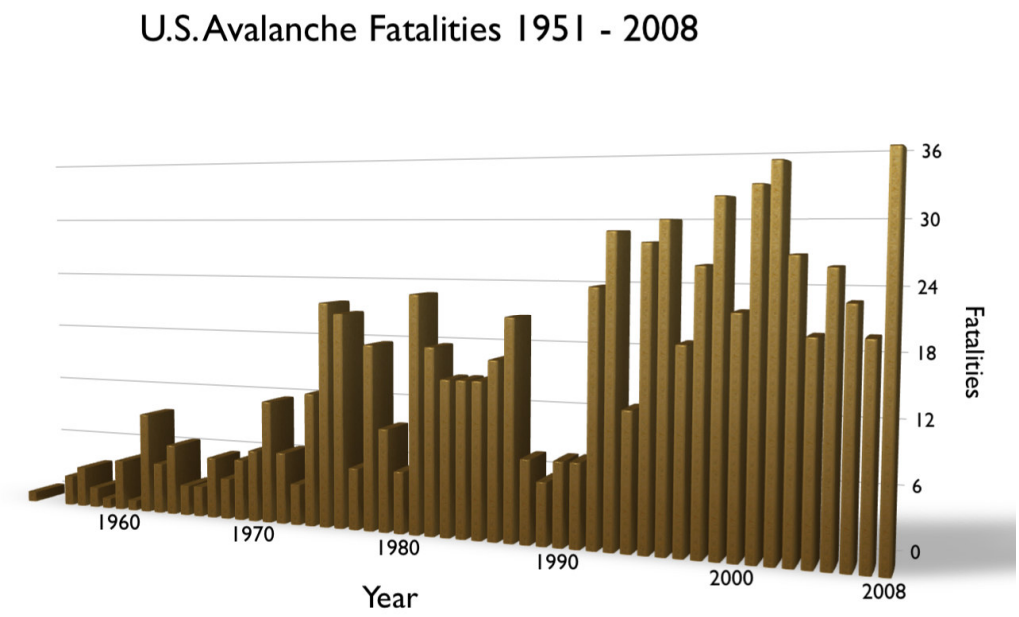
Date	Region	Location	Avalanche Type	Trigger	Elevation (feet)	Aspect	Steep-ness	Depth	Width (feet)	Vertical (feet)	Weak Layer	Photo (click box)	Profile (click box)	Caught	Carried	Injured	Part/Full Burial	Co
4-10-08	SLC	Patsy Marley	Wind Slab	Skier		W		3-16 inches	60-70									Cross loaded wind short of
4-10-09	SLC	Emma Ridges	Wet	Skier		S			15	200								Skier triggered at branc
4-10-10	SLC	Cardiac Bowl	Wind Slab															Reported s
4-10-11	SLC	Silver Fork	Wind Slab	Skier	10,000	N		5-12 inches	10									Two skier trig
4-10-12	SLC	Little Superior	Wind slab	Skier		S			75	300								Skier trigger
4-10-13	SLC	Mill B South	Wind slab	Skier	9,000	E	42	10 inches	50	700				1	1			Skier triggered o
4-10-08	SLC	Patsy Marley	Wind Slab	Skier	9800'	W		12"	50'	150'								Skier triggered sl
4-9-08	SLC	Patsy Marley	Soft Slab	Skier	?	?	?	?	?	?								Skier reported tr
4-7-08	SLC	Little Superior	Sluff	skier	9600'	Sly		14"	30'	300'				1	1		1	Pa
4-3-08	SLC	Little Superior	wet Loose	skier		Sly	35+							1	1			Numerous natura sluffs, with easte
4-3-08	SLC	Cardiac Bowl	Soft slab/wind slab	skier	10,800	NE	35+	12"	75'	400'				1	1	1		Skier caught and c rock as escaping
4-1 & 4-2-08	All	Many	Soft Slab/ wind slab	skiers/ boarders	mid and upper	mostly northerly												Shallow small so and unintentic
3-27-08	SLC	Mill B South	Soft Slab	Skier	10,700'	N	35	18"	40'	150'	facets	yes						Skier unintentional Brol
3-25-08	SLC	Crows Feet	Wet sluff	Skier	9,500'	NW	35+	3-12"		2000'+								No one caught. balls, then widene
3-17-08	SLC	Mill Back bowl area, BCC	Soft Slab	snowshoer		ENE	35+	12"-18"										
3-15-08	Farmington	Near Bountiful Peak	Soft Slab	Snow-mobile	9500'	ENE		12-18"	50'			yes						
3-15-08	SLC	Days Fork	Soft Slab	skier	9800'	NE		12-18"	60'	700'	facets			1	1			
3-14-08	SLC	Cardiff pass south side	Soft slab	skier	8800'	SE	40	18"						1	1			Skier took 100' r

Date	Region	Location	Avalanche Type	Trigger	Elevation (feet)	Aspect	Steep-ness	Depth	Width (feet)	Vertical (feet)	Weak Layer	Photo (click box)	Profile (click box)	Caught	Carried	Injured	Part/Full Burial	Co
3-14-08	SLC	Georges Bowl	Soft Slab	skier	9,000'	ENE	40	12-18"	50'	100'	NSF/SH	yes		1	1			Carried 100', OK. an
3-14-08	PC	Dutch Draw near Canyons Resort	Soft slab	skier	10,000'	SE	35+	12"	25'	full length	new snow			1	1			Person took 100' SE facing slopes surfac
2-29-08	Ogden	south of Snowbasin	Wet Sluffs	Skier	<9,000'	S, SE	35+		1000'+	1000+	wet snow							
2-26-08	SLC	Superior Peak, LCC	Soft Slab	Skier			Steep-ness	1	80									Skier triggered-
2-26-08	SLC	Dutch Draw near Canyons Resort	Soft Slab	Snowboarder		SE	40	1	100	600				1				Apparent snowt
2-26-08	SLC	Kessler Pk - Catcher's Mitt, Cardiff Fork	Soft Slab	Skier	10,000	E		2	100	2000								F
2-26-08	SLC	Cardiac Ridge - BCC Cardiff Fork	Soft Slab	Skier	10,200	E-SE	40	2	50	1000		yes		1	1	1		Skier triggered h
2-26-08	SLC	Superior Peak, LCC	Wet sluffs	Skiers		S												Several skier trig the afternoon on
2-26-08	SLC	Emma 2 - LCC	Soft Slab	Skier														Ski
2-26-08	SLC	Toledo Bowl - LCC	Soft Slab	Skiers	10,200	SW	40	2	100	500	graupel and facets	yes		3	3		1	5 skiers travers caught, 1 partiall
2-23-08	SLC	South facing Emmas	Wet Loose	Skiers	9500'	S	35+							2	2			
2-22-08	SLC	Y Couloir	sluff or soft slab	natural	9000'?	North	35+			1,200+	new snow			3	3	?	?	3 people caught, full 1,200'
2-17-08	SLC	Mt Tuscarora	Wind Slab	Skier	10,500'	SE	45	2-4"	35'	100'				1				Skier triggered
2-14-08	SLC	Toledo Chute	Wind Slab	Skier	9000'	SE	35+	4-10"	40'	100'?		Yes						Skier popi
2-3-08	Ogden	Weber Canyon	Soft Slab	Natural										2	2	2	2	2 cars
2-3-08	Ogden	Ogden Canyon	Soft Slab	Natural														Steep cutbank
2-2-08	SLC	North Above Twin Lakes Pass	Soft Slab	Skier	10,200'	E		1'	75'		new snow			1	1			
2-2-08	SLC	Davenport Hill	Soft Slab	Skier	9200'	NNE		12-18"			new snow	yes						
2-2-08	SLC	Brighton BC into Snake Crk	Soft Slab	Snow Cat	10,100'	E		1-3'	75'		new snow	yes						
2-2-08	SLC	Clayton Peak into Caribou	Soft Slab	Skier	10,200'	N		10-20"			new snow			1	1			
2-2-08	SLC	Clayton Peak into Snake Crk	Soft Slab	Skier-remote	9000'	SE		1-3'	600'		facet/crust	yes						
2-2-08	SLC	Upper Days Fork - Jaws	Wind Slab	Skier	10k	N		1'	40'		Wind slab			1	1			
2-2-08	SLC	Argenta	Hard Slab	Skier		N		2-3'	50'	1000'	old facets							
2-2-08	SLC	Davenport Hill	Loose	Skier	9300'	S								1	1			Carried onl
2-1-08	SLC	Davenport Hill	Soft Slab x 3	Skier	9000'	S	35+	12-18"?	130'	700'				1	1		1	Skier caught, can
1-27-08	SLC	Upper Porter Fork - Raymond	Hard Slab	Cornice	9200'	N>W		1-2'	100'		?							Cornice drop tri sympathetic

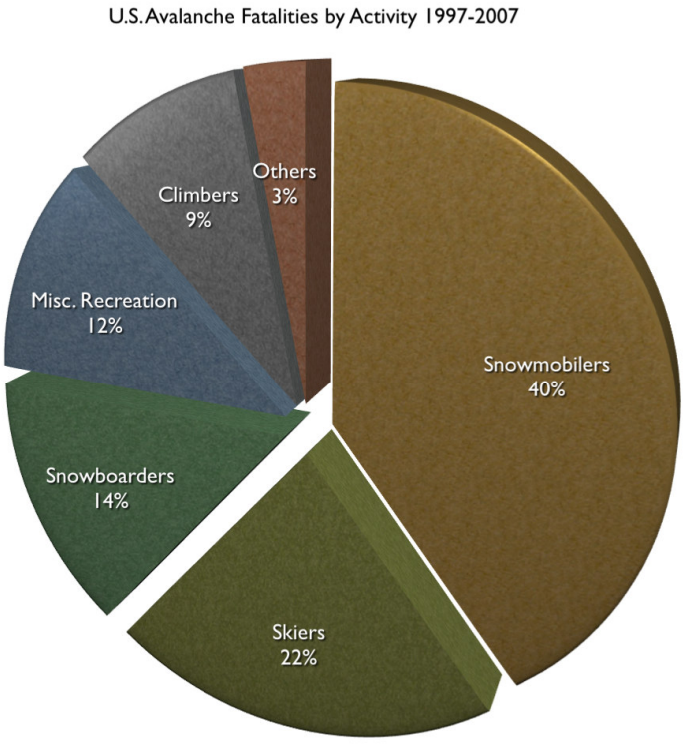
Date	Region	Location	Avalanche Type	Trigger	Elevation (feet)	Aspect	Steep-ness	Depth	Width (feet)	Vertical (feet)	Weak Layer	Photo (click box)	Profile (click box)	Caught	Carried	Injured	Part/Full Burial	Co
1-26-08	SLC	Hogum	Soft Slab	Snow boarder	>9000'	?	35+	5-6'	20'	40'	?							Large pillow crac also triggered
1-26-08	Ogden	Ben Lomond	Soft Slab	Skier	?	E?	35	8"	30'	200'								Skier tr
1-26-08	Ogden	Whiskey Peak Monty Cristo	Soft Slab	Snow mobiler	9000'	N	38+	2'	200'	300'		Yes						Human trigg
1-22-08	SLC	Scotties, LCC	Soft slab	skier	8600'	N	35+	2'	40'	200'				1				skier ca
1-14-08	SLC	Gobblers	Wind Slab	Skier	10,000'?	S	35+	3-20"	60'	400'	Density change	Yes		1	1			Skier caught ar intentionally
1-9-08	PC	Canyons backcountry	Soft Slab	Skier				1'	60		new snow	Yes						Skier trig
1-7-08	SLC	Days Fork	Hard Slab	Cornice drop	10,200'	N	35+	4'	500+		facets							Large hard slab fa by an int
12-31-07	Uintas	Co-op Creek		Snow mobiler										1	1	1	1	Snowmobile fata
12-30-07	SLC	Butler Fork	Soft Slab	Skier				8"	100		new snow	Yes						Skier exiting Butler out 50' above no w
12-29-07	Uintas	Mill Hollow Trailhead	Hard Slab	Snowmobiler	9500'	NE		3-5'			old facets							
12-25-07	Uintas	Superbowl near Windy Ridge	Soft Slab	Snow mobiler	10,200	NE	39	2-4'	1000'		old facets	yes		1	1	1	1	Snowmob
12 23 07	SLC	Canyons Ski Area	Hard Slab	Skiers	9600'	NE		3 5"	175'	700'	old facets			4	4	1	4	Fatality from trauma zone. Re
12-22-07	SLC	Hellgate/ Cardiff Pk	Soft Slab	Skier-remote	10,100'	WNW		1-2'	150'	700'	facets	yes	yes					
12-20-07	SLC	Claytons Peak	Soft Slab	Skier Remote	10,200'	ENE		12"	60'	500'								Released 150' aw
12-20-07	SLC	West Bowl	Soft slab	Skier	10,000'	WNW		7-12"	150	500								Skier triggered
12-20-07	SLC	Emma Ridges	Wind Slab	Skier	8,600'-10,000'	S		12-18"										Numerous pocket
12-20-07	SLC	Flagstaff Ridge across from Alta	Wind Slab	Skier	9,500	S-SE	38	1	100	1000	new snow			1	1		1	Skier triggered, (descer
12-19-07	SLC	Mill Creek, Porter Fork, West Bowl	Soft Slab	Skier	9,000	E		1'	15		Surface hoar?							Skier descended s slide on gentler sl hoar.
12-14-07	SLC	Hidden Canyon near Brighton	Soft/Hard Slab	Snow-boarder	10,400'	NNW		2-3'		750"	facets							Another one trigg
12-14-07	SLC	Hidden Canyon near Brighton	Soft/Hard Slab	Snow-boarder	10,400'	NNW		2-3'		750"	facets							2-3' slide engulfin
12-13-07	SLC	Pioneer Ridge	Soft Slab	Snow-boarder	10,400'	N								1	1		1	Caught, carriec
12-13-07	SLC	Hidden Canyon near Brighton	Soft/Hard Slab	Snow-boarder	10,250'	NNW	39-42	1-2'	100'	700	facets	yes		2	2	1	1	Caught, ca
12-11-07	SLC	Wilson Glade	Soft Slab	Skier	9,800'	N	35+	1.5-2'	50'	500'	facets							
12-9-07	SLC	Cardiff Peak	Soft Slab	Skiers - remote	10,200'	N		2-3'	300'	800'	facets	yes						Pulled

Date	Region	Location	Avalanche Type	Trigger	Elevation (feet)	Aspect	Steep-ness	Depth	Width (feet)	Vertical (feet)	Weak Layer	Photo (click box)	Profile (click box)	Caught	Carried	Injured	Part/Full Burial	Co
12-8-07	SLC	Pink Pine	Soft slab	Skier-remote	9500'	NE		1-3'	50'		facets							
12-7-07	SLC	Days and Silver Fork	Soft/Hard Slab	skier	above about 9,500'	Nly	35+	12-20"	50-75'		facets							
12-2-07	SLC	Days Fork	Soft slab	Skier-remote	10k	N		14-18"	100'		facets							
12-2-07	SLC	closed terrain LCC	Soft/Hard Slab	Skier on uptrack	10,400'	ENE		1'	100'		facets			1	1	1	1	Brok
12-2-07	SLC	closed terrain LCC	Soft/Hard Slab	Skier	10,300'	N		2'	75'	400'	facets	yes						Brok
12-1-07	SLC	Days Fork	Soft slab	Skier	10,000'	North		1'-2'	200'	400'	facets			1	1			
12-1-07	SLC	East Bowl Silver Fork	Soft slab	previous avalanche	10,000'	North	35-45	1'	150'		depth hoar							
12-1-07	SLC	East Bowl Silver Fork	Soft slab	Skier	10,000'	North	35	1'	70'		depth hoar							Skier face pla Reportedly still
12-1-07	SLC	Sunset Peak	Soft slab	Skier	10,200'	North					facets			1	1			
12-1-07	SLC	Rocky Point	Soft-slab-many	Skiers - remote	10,200'	North	35-40	1-2'	50-200'		facets	yes						
12-1-07	SLC	Patsy Marley	Soft Slab - remote	Skier from ridgeline	10,100'	North	35'	1-2'	50'		facets							
12-1-07	SLC	Patsy Marley	Soft Slab	Snowboarder	10,000'	North	38	1-2'	150'		facets	yes		1	1			
10-18-07	SLC	Alta Baldy high shoulder - preseason	Soft Slab	Skiers - remote	11,000'	NE		2-3'	200'	1000'	facets	yes						

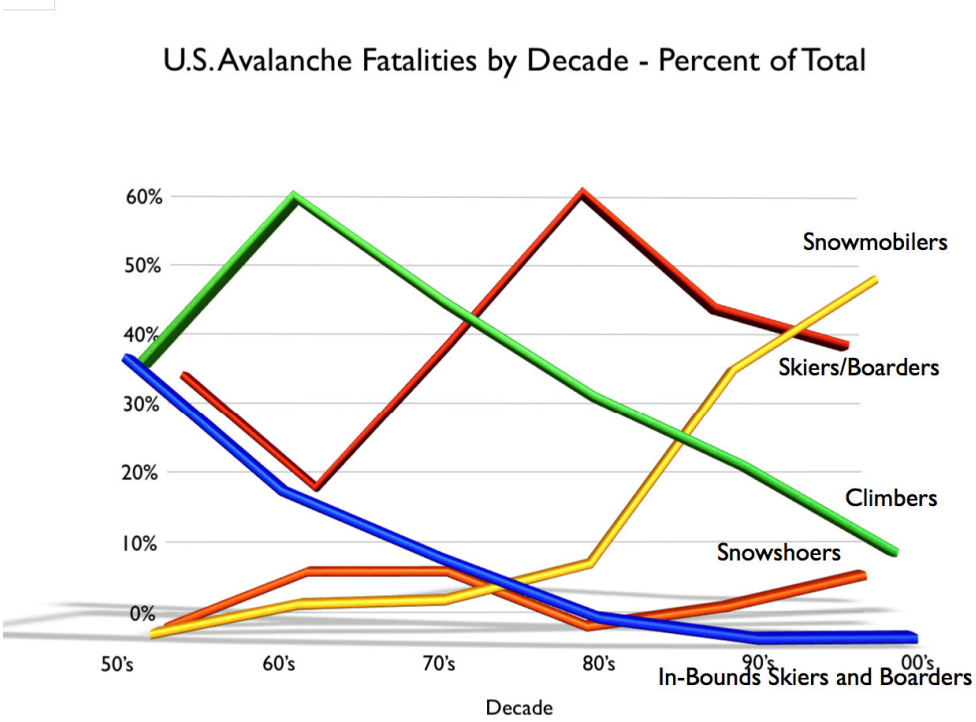
Fatalities in the U.S. continue their steady rise. As of this writing, there was a record of 36 avalanche fatalities in the U.S.. After several below average years, we have returned to an average year in terms of snowfall and avalanche fatalities.



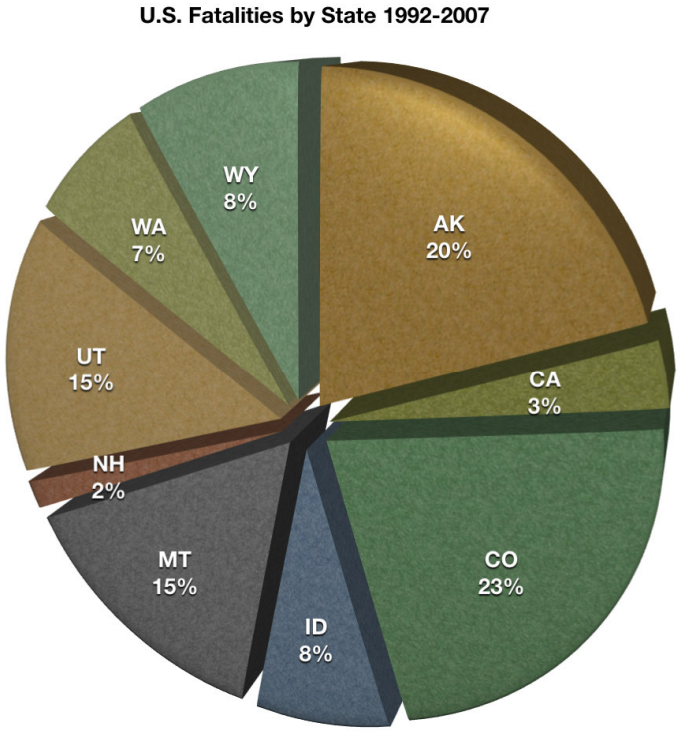
Snowmobilers continue to lead other user groups. Even if we combine skiers and snowboards together, snowmobilers continue to lead the fatality list. As education efforts continue, we expect fatality numbers among snowmobilers to drop in coming years.



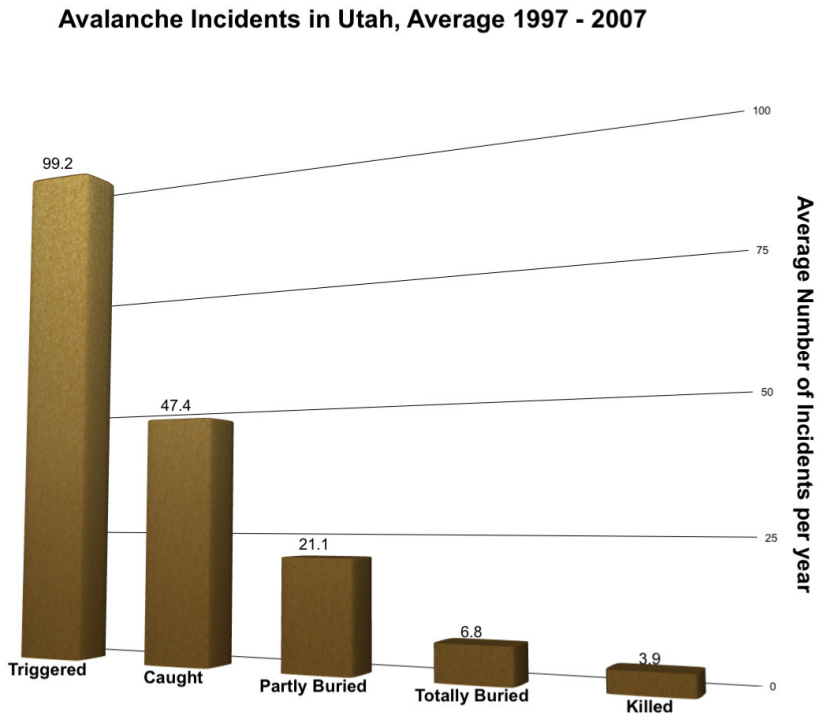
Fatalities among user groups have changes through the years. The new kids on the block always account for the most fatalities until they can become educated. The current crop of new groups in the backcountry include snowmobilers and snowshoers.



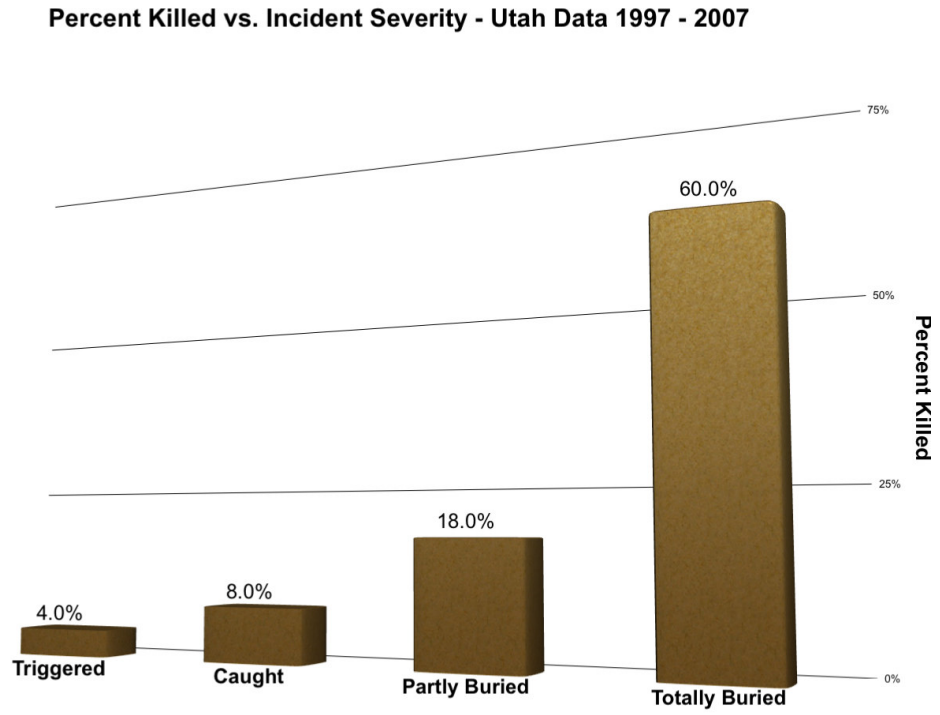
Colorado and Alaska continue to lead the pack with Utah and Montana just behind. Utah averages four avalanche fatalities per season.



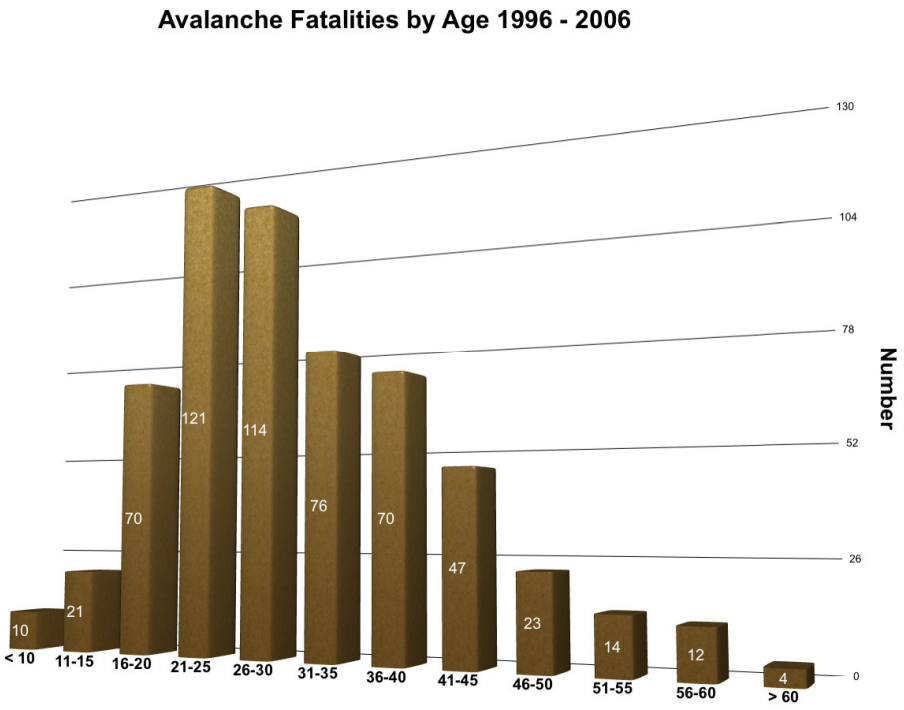
The number of incidents by severity. Luckily, avalanches are surprisingly benevolent, giving us several cheap lessons before an expensive one.. The first lesson, however, can be fatal.

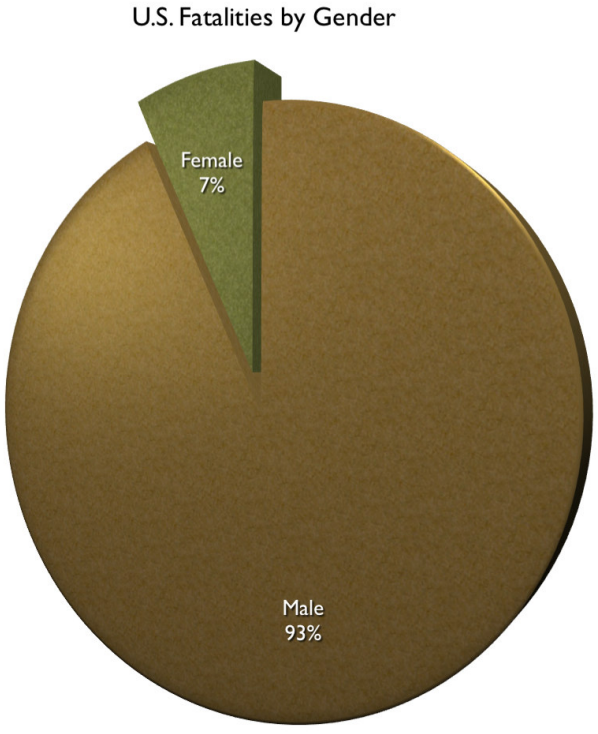


One key to surviving an avalanche is to avoid burial. This is why avalanche air bags have been so phenomenally successful because more than 98 percent of people with air bags end up on the surface and alive. Most of the fatalities from the other groups occur because of trauma on the way down. A quarter of victims are killed from trauma.



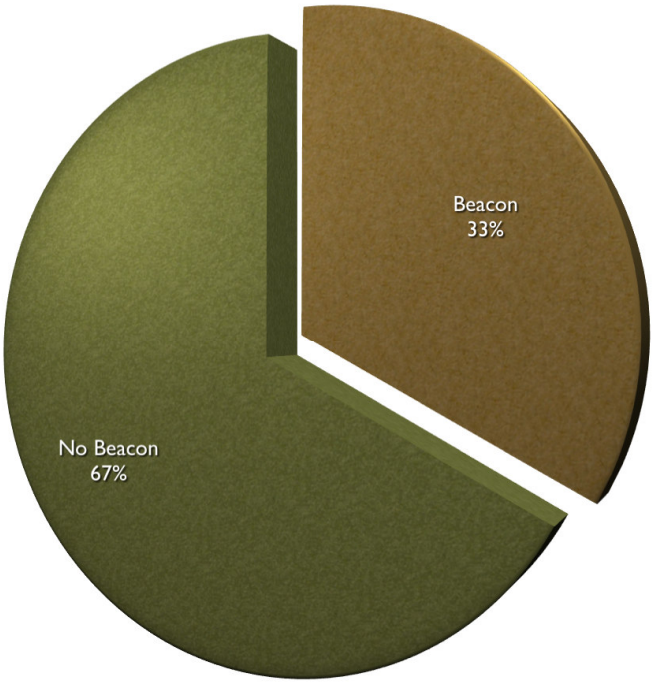
Avalanche fatalities by age and sex. Not surprisingly, these are very similar to populations in U.S. prisons.





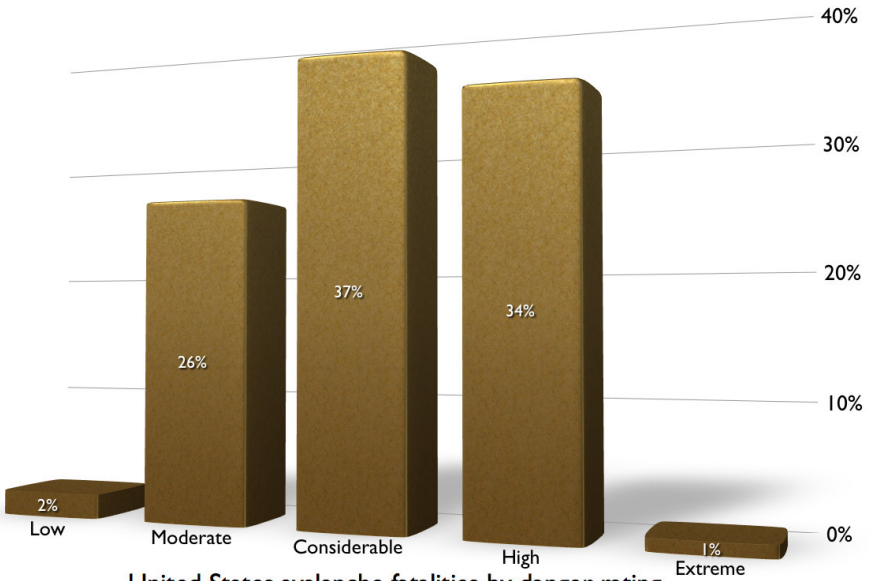
Two thirds of victims are not even carrying basic rescue gear, which indicates that most victims die because of ordinary ignorance. This is the reason, we are spending more resources on outreach and education. Not surprisingly, these are similar ratios to the ratio of drowning victims who wear life jackets. Most victims are not equipped nor educated.

U.S. Beacon Use Among Completely Buried Victims



Most avalanche fatalities occur in terrain rated as Considerable. These middle categories represent the maximum interaction between people and avalanche hazard. People tend to avoid going out into terrain rated as high or extreme.

Percent of Avalanche Fatalities by Danger Rating - U. S.



United States avalanche fatalities by danger rating

Avalanche Fatalities in Utah 1958-2006 - By Activity

Date	Male Deaths	Female Deaths	Location	Activity	Skier	Climber	Snow boarder	Snow mobiler	Other Recreation	Worker	Resident
9-Mar-58	2		Snowbasin	Rescuer						2	
29-Mar-64	1		Snowbasin	Worker						1	
31-Dec-65	1		Park City	In-bounds skier	1						
12-Feb-67	2		Pharoah's Glen	Climbers		2					
19-Feb-68	1		Rock Canyon	Hiker					1		
29-Jan-70	1		Alta	In-bounds skier	1						
29-Jan-73	1		Park West	In-bounds skier	1						
6-Jan-76	1		Alta	Out of bounds skier	1						
3-Mar-77	1		Snowbird	In-bounds skier	1						
19-Jan-79	1		Helper	Worker						1	
2-Apr-79	1		Lake Desolation	Backcountry skier	1						
11-Jan-80	1		Evergreen Ridge	Out of bounds skier	1						
1-Feb-81	1		Cardiff	Hiker					1		
1-Mar-81	1		Millcreek	Backcountry skier	1						
22-Mar-82	1		near Park West	Backcountry skier	1						
2-Jan-84	1		Superior Peak	Backcountry skier	1						
22-Feb-85	1		Near Powder Mountain	Backcountry skier	1						
19-Mar-85		1	Park City	In-bounds wet slide	1						
13-Nov-85	2		Sunset Peak	Backcountry skiers	2						
6-Jan-86	1		Provo Canyon	Backcountry skier	1						
17-Feb-86	1		Big Cottonwood Canyon	Backcountry snowboarder			1				
19-Feb-86	1		Alta	In bounds skier	1						
20-Nov-86	1		Sugarloaf, Alta	Hiker in unopened area					1		
15-Feb-87	1		Twin Lakes Reservoir	Backcountry skier	1						
25-Nov-89	1		Tony Grove Lake, Logan	Backcountry skier	1						
12-Feb-92	3	1	Gold Basin, La Sal Mtns	Backcountry vskiers	4						
1-Apr-92	1		Mineral Basin, near Snowbird	Backcountry skier	1						
16-Jan-93	1		Sundance (closed area)	Backcountry skier	1						
25-Feb-93	1		Pinecrest, Emig. Cyn.	Backcountry skier	1						
3-Apr-93	1		Wolverine Cirque	Backcountry skier	1						
18-Feb-94	1		10,420 Peak, B.C.C.	Backcountry skier	1						
7-Nov-94	1		Snowbird (pre-season)	Backcountry skier	1						
14-Jan-95	2		Ben Lomond, near Ogden	Snowmobilers				2			
23-Jan-95	1		Midway	Resident killed in roof slide							1
12-Feb-95	1		Gobbler's Knob, B.C.C.	Backcountry skier	1						
2-Feb-96	1		Solitude patroller	Worker						1	
27-Mar-96	1		Maybird Gulch, L.C.C.	Backcountry skier	1						
7-Dec-96	1		Bountiful Peak	Snowmobiler				1			
26-Dec-96	1		Flagstaff Peak	Backcountry snowboarder			1				
11-Jan-97	3		Logan Peak	Three campers					3		
25-Jan-97	1		Provo Canyon	Climber		1					
17-Jan-98	1		Near Coleville	Snowmobiler				1			
18-Jan-98	1		Sanpete County	Snowmobiler				1			
26-Feb-98	1		Near Weber State	hiker (possible suicide)					1		
7-Nov-98	1		Snowbird (pre-season)	Snowboarder			1				
2-Jan-99	2		Wasatch Plateau	Snowboarders			2				
29-Jan-99	1		Mt. Nebo	Snowmobiler				1			
6-Feb-99	1		Little Willow Canyon	Hiker					1		
11-Jan-00	1	1	Squaretop	Out of bounds Skiers	2						
14-Dec-01	1		Willard Basin	Snowmobiler				1			
27-Feb-01		1	Near Canyons Resort	Out of bounds Skier	1						
10-Mar-01	2		Uinta Mtns near Oakly	Snowmobiler				2			
28-Apr-01	2		Stairs Gulch, BCC	Climbers		2					
31-Jan-02	1		Windy Ridge, Uinta Mtns.	Backcountry Skier	1						
16-Mar-02	2		Pioneer Ridge near Brighton	Out of bounds Snowboarders			2				
15-Feb-03	1		Gobbler's Knob, B.C.C.	Skier	1						
26-Dec-03	3		Aspen Grove, Timpanogos	Snowboarders			3				
26-Feb-04	1		Empire Canyon - Park City	Snowshoer					1		
10-Dec-04	1		Twin Lakes Pass	Skier	1						
11-Dec-04	1		Trout Creek, Uintas	Snowmobiler				1			
11-Dec-04	2		Mineral Fork	Snowshoer					2		
8-Jan-05	1		Ephriam Canyon, Wstch Plt	Snowboarder			1				
8-Jan-05	1		Choke Cherry, Wasatch Plt	Snowmobiler				1			
14-Jan-05	1		Dutch's Draw	Snowborder			1				
31-Mar-05	1		Eccles Peak, Monte Cristo Rg	Snowmobiler				1			
31-Dec-05	1		Mt Timpanogos	Snowshoer					1		
11-Mar-06	1		Taylor Canyon near Mt Ogden	Snowboarder			1				
3-Apr-06	1		Pioneer Ridge near Brighton	Snowboarder			1				

17-Feb-07	1		Signal Mountain, Sevier County	Snowmobiler				1			
17-Feb-07	1		Tower Mountain, Uintas	Snowmobiler				1			
18-Feb-07	1		Hell's Canyon-Ogden Mtns	Skier	1						
21-Feb-07	1		Gobbler's Knob, B.C.C.	Skier	1						
24-Dec-07	1		Canyons Resort	Skier	1						
25-Dec-07	1		Windy Ridge, Uinta Mountains	Snowmobiler				1			
31-Dec-07	1		Co-op Creek, Uinta Mountains	Snowmobiler				1			
	Male	**Female**	**Male & Female**	**1958 season - Present**	**39**	**5**	**14**	**16**	**12**	**5**	**1**
Totals	**88**	**4**	**92**	**Past 5 seasons**	**5**	**0**	**9**	**5**	**4**	**0**	**0**
Percentage	**95.7%**	**4.3%**	**100%**	**Past 10 seasons**	**9**	**3**	**12**	**13**	**6**	**0**	**0**

A close call in Toledo Bowl near Alta Ski Area. A group of skiers were breaking a diagonal trail uphill when they triggered a soft-slab avalanche under the cliff. Several were caught and partly buried and some lost some equipment. The weak layer was graupel, that styrafoam ball-type of snow that typically rolls off steeper terrain and collets on less steep terrain under cliffs. When buried by new snow it acts like tiny ball bearings.
Devin Dressel photo

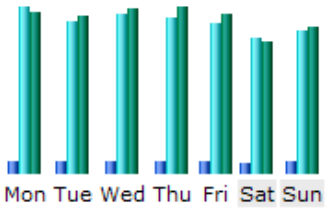
Web Traffic

Nearly all of the access to our products occurs via the web, which is good because the web is such a powerful tool especially for the dissemination of graphics-based products, such as our avalanche advisories, photos, video tutorials and web-based tutorials.

We calculated the web traffic using AW Stats, which is considered to be the gold standard among web traffic analytic tools. The numbers on the following pages are "page views", which means the number of times a person clicked to display a certain page. These are not "hits" as some web sites incorrectly cite, because hits also include all the graphics on a certain page including arrows, icons, etc, which is not a fair way to judge web traffic. Finally, the statistics do not include page views by automated web crawlers, such as Google, Yahoo, etc.

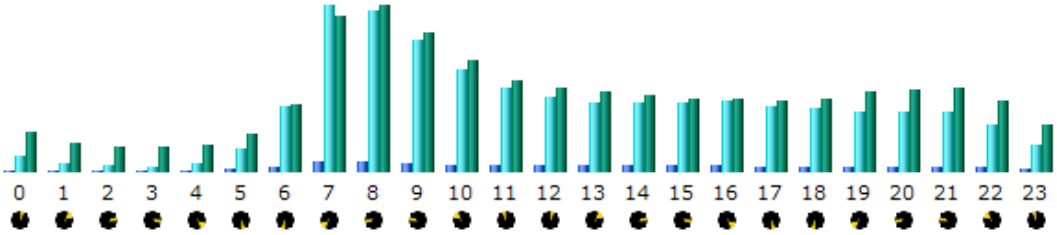
The web traffic is truly impressive with over two million (2,239,403) unique page views per season. (If we counted hits, it would be over 20 million.) This kind of traffic would be the envy of many web sites.

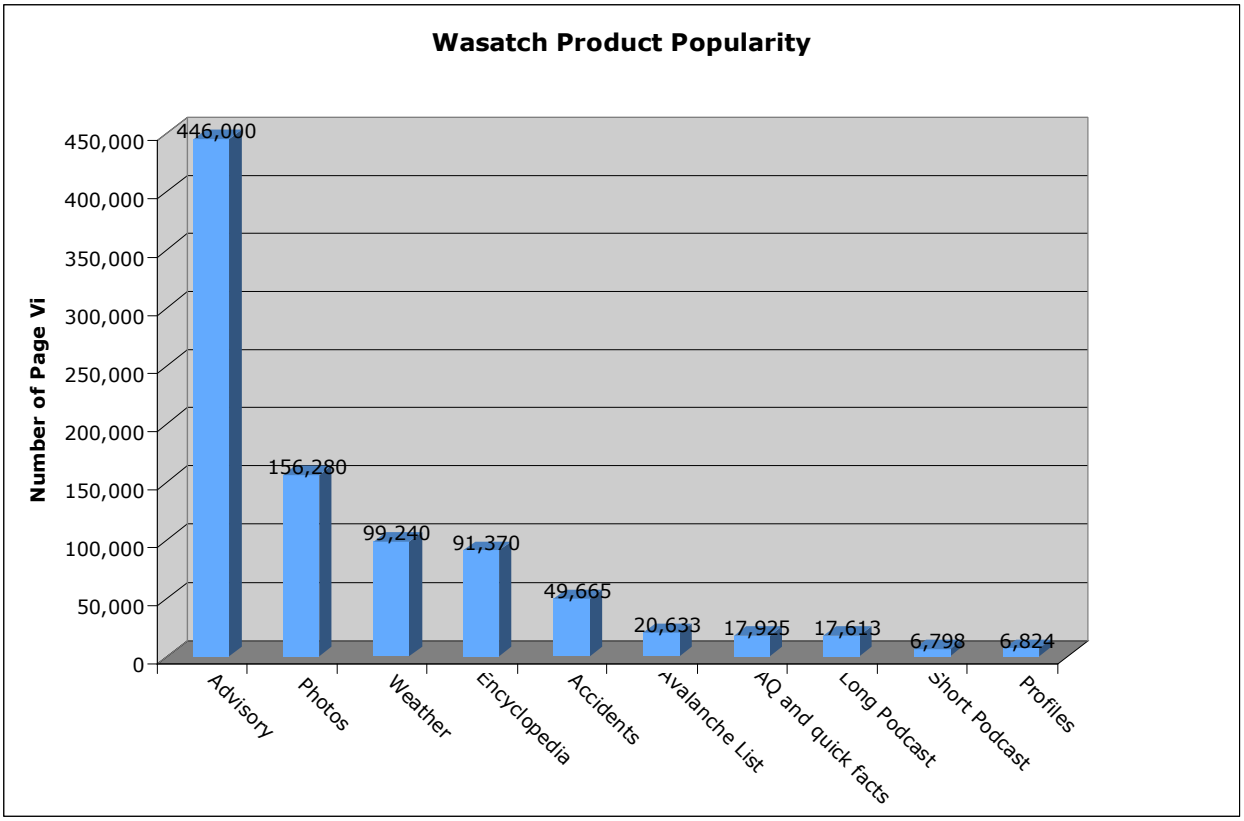
Days of week

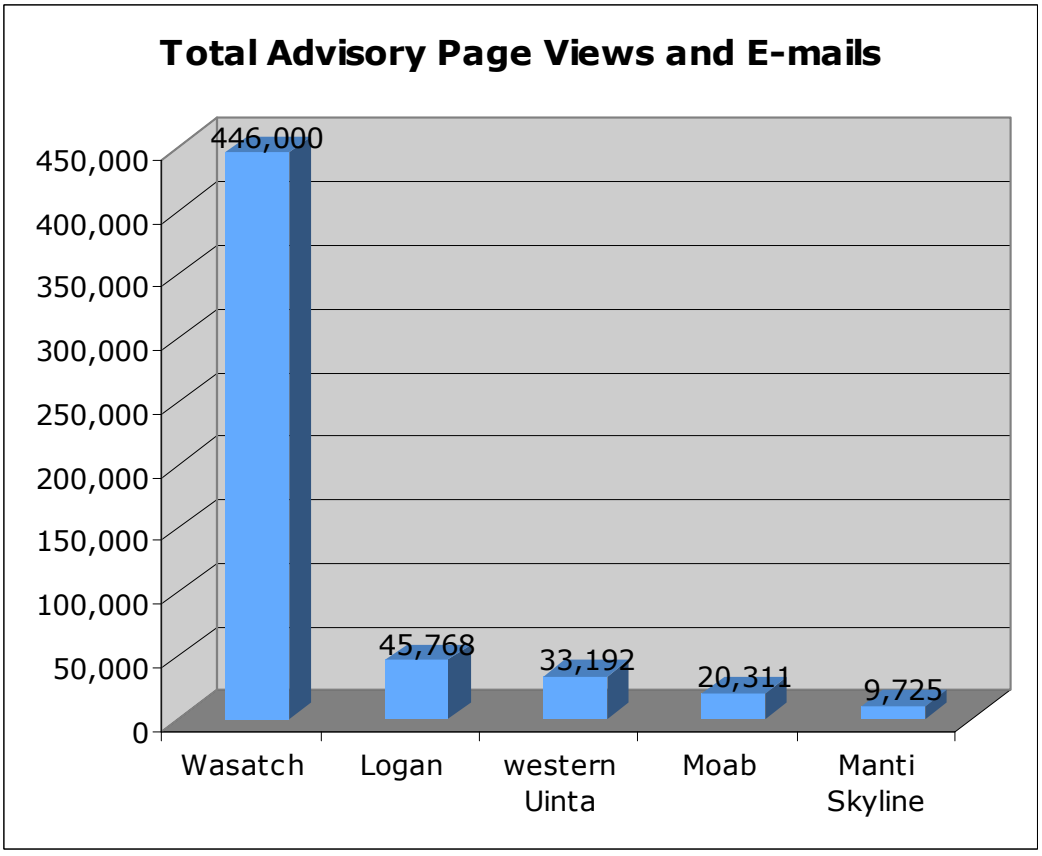


Day	Pages	Hits	Bandwidth
Mon	11944.89	159493.16	2.19 GB
Tue	11962.80	145316.45	2.13 GB
Wed	12024.58	153193.21	2.23 GB
Thu	11849.89	149142.11	2.25 GB
Fri	11134.05	145001.26	2.16 GB
Sat	9645.26	130366.21	1.79 GB
Sun	10779.42	137959.79	1.99 GB

Hours




Wasatch Product Popularity
Number of Page Vi
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
446,000
156,280
99,240
91,370
49,665
20,633
17,925
17,613
6,798
6,824
Advisory
Photos
Weather
Encyclopedia
Accidents
Avalanche List
AQ and quick facts
Long Podcast
Short Podcast
Profiles


Total Advisory Page Views and E-mails
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
446,000
45,768
33,192
20,311
9,725
Wasatch
Logan
western Uinta
Moab
Manti Skyline

Web Page views
2007-08

These statistics are derived from AW States, which is considered to be the gold standard for web statistics. All automated web crawlers are subtracted from these numbers. They represent the number of page views, which means each time a unique user clicks to view a page. It does not include the number of "hits" which is a much higher number since each page often includes several graphics, which would count as a hit.

Page	Nov-Dec 2007	Jan-April 2008	Sub Total	Total
Wasatch				
Total Page views	703,080	1,519,440	2,222,520	
Graphic Advisory	82,667	222,351	305,018	
Text Advisory	10,168	22,711	32,879	
E-mail Advisory (201,546 e-mails with about 50 % open rate)			100,000	
Advisory with Glossary	2,725	5,378	8,103	
Advisory total				446,000
Photos	43,269	113,011	156,280	
Weather Graphic	17,294	63,898	81,192	
Weather Text	13,372	4,676	18,048	
Weather total				
Encyclopedia	36,769	54,601	91,370	
Accidents	27,730	21,935	49,665	
Avalanche List	4,744	15,889	20,633	
Long Podcast	6,604	11,009	17,613	
Short Podcast	4,595	2,203	6,798	
FAQ	4,293	5,317	9,610	
Profiles	2,037	4,787	6,824	
Quick Avi Facts	3,734	4,581	8,315	
Uinta				
Graphic Advisory	4,003	14,019	18,022	
Text Advisory	4,529	10,641	15,170	33,192
Photos	902	5,778	6,680	
Logan				
Total Page Views	29,627	59,096	88,723	
Graphic Advisory	7,145	19,144	26,289	
Text Advisory	5,970	13,509	19,479	45,768
Photo list page	1,686	5,878	7,564	
Weather	2,622	3,686	6,308	
Avalanche List	388	986	1,374	
Moab				
Total Page Views	3,826	14,334	18,160	
Graphic Advisory	1,271	10,110	11,381	
Text Advisory	2,974	5,956	8,930	20,311
Maps	28	185	213	
Weather	32	197	229	
Skyline				
Text Advisory	1,280	2,745	4,025	
Graphic Advisory	982	4,718	5,700	9,725

Education

We feel that avalanche education is an essential part of staying alive in avalanche terrain. For the past three winters, we have emphasized reaching the people who are unaware of avalanches, don't understand their potential danger and power, or don't recognize that they travel in avalanche terrain. Our program tries to not only give people the basics of avalanche knowledge, but to also create and maintain an avalanche culture, where people learn from their peers.

We teach many free avalanche awareness classes throughout the season, partially to give people the basics of how to stay alive, but also to inspire them to take a more detailed, multi-day avalanche class from the private sector. The Know Before You Go program gave an incredible 129 talks to 17,000 youth. In addition, our staff taught 30 avalanche classes and directly reached over 3000 people. Brett Kobernik staffed the Avalanche Awareness booth at the 3-day Natural Resources Fair in Richfield, which had an attendance of over 2,000 students and families.

Perhaps the best avalanche education is to be visible at the trailheads and in the backcountry Here, Craig Gordon takes delivery of a loaner snowmobile from the generous folks at Weller Recreation and Ski-doo in front of one of our three new snowmobile trailers, which serves as a traveling billboards for avalanche awareness in the Uintas, Logan, Moab and the Manti Skyline..

"Know Before You Go" Avalanche Education Program

The Know Before You Go program (KBYG) wrapped up its fourth season and both the impact and sheer numbers of people viewing the program are staggering. In four short years we've averaged over 100 state-wide presentations per year, educating nearly 75,000 young adults to the dangers of avalanches. It appears our efforts are making a difference. Prior to KBYG's existence, teens were making up the growing statistic of backcountry users likely to get caught and killed in avalanches. While the number of backcountry users grows exponentially each year, we're proud to say not one teen that has seen the program has been injured or killed in an avalanche.

This season we gave 129 KBYG presentations reaching out to over 17,000 winter enthusiasts. Our basic message is for all user groups and the fast-paced, dynamic presentations are well received. Proactive programs often have difficulty showing how they save lives, but KBYG has a proven track record and we can see the results not only in the decline of teen avalanche fatalities, but also with the tangible skills students take away with them. This past winter, three quick thinking teens received an American Red Cross award for helping find a young man caught and buried in an avalanche. They remembered the KBYG program and what to do during a rescue. The three sophomore aged girls assisted an organized rescue and struck the buried skier with a probe. Their participation along with what they learned from the avalanche assembly helped save a young man's life.

We decided early in the season to focus more on rural users who might not get the opportunity to receive avalanche education in a convenient or timely fashion and this year it really paid off. While the total number of viewers was down slightly, we felt it was imperative to reach out to mountain communities who may not even know where to find current avalanche information. New areas we branched out to included both middle and high schools in Rich, Duchesne and Carbon Counties. These counties have witnessed first hand, the devastating effects of avalanche fatalities and embraced the program with open arms. Of course the program wouldn't be so successful if it were not for the highly knowledgeable staff, who along with their jobs as ski patrol and snow safety personnel, find time and energy to present the program. We're grateful to all our participating ski area partners who allow their staff to help out with the presentations.

This summer we plan to revamp the very popular KBYG introductory video and make it available on the internet along with a narrated PowerPoint presentation and online quiz. Also, we'll work with the State Office of Education on the planning to implement the program into the 8th grade health and physical education curriculum.

UAC Avalanche Education 2007-08

Date	Staff	Event	No. people
10/21-26/2007	Lees/Tremper	National Avalanche School	180
11/8/2007	Hardesty	Sandy REI Snowshoe Clinic	30
11/20/2007	Hardesty	Blasters Clinic	300
11/29/2007	Lees	Sandy REI Avalanche Awareness	50
11/29/2007	Weed	Avalanche Awarness Logan	10
12/6/2007	Hardesty	US Randonee Team Fundraiser	50
12/11/2007	Hardesty	SLC REI Avalanche Awareness	75
12/12/2007	Tremper	American Meteorological Society	25
12/13/2007	Tremper	Wasatch Mountian Club	150
12/13/2007	Lees	ACE Womens Beacon Clinic	15
1/11/2008	Tremper	Park City	250
1/19-21/2008	Kobernik/Lees	FUAC 3-day Brighton Level 1	30
1/22/2008	Tremper	Outdoor Retailer Show	20
1/22/2008	Tremper	Outdoor Retailer Show Base Camp	30
1/24/2008	Weed/Pagnucco	FUAC Logan Level 1	30
1/24/2008	Tremper	S.L. Library Pannel Discussion	200
1/24/2008	Lees	ACE Womens Avalanche Clinic	10
1/24/2008	Lees	Sandy REI Snowshoe Clinic	40
1/29/2008	Tremper	REI Science of Avalanches	200
2/6/2008	Hardesty	Powder Mnt Volunteer Ski Patrol	60
2/8/2008	Weed/jPagnucco	USU ORC Avalanche Basics	10
2/12/2008	Tremper	Utah Valley State College	30
2/14/2008	Lees	Sandy REI Snowshoe Clinic	40
2/16-18/2008	Staff	FUAC 3-day Brighton Level 1	30
2/28/2008	Tremper	PC Rotory Club	60
2/29/2008	Tremper	Backcountry.com employees	35
3/1/2008	Weed/Pagnucco	FUAC - Logan Level 1	5
4/24-26/2008	Kobernik	Richfield Natural Resource Fair	2000
5/8/2008	Tremper/Pagnucco	Ogden City Planners	30
		Total	**3995**

Know Before You Go talks 2007-08

DATE	LOCATION	INSTRUCTOR	TURNOUT	# of TALKS GIVEN
8/27/2007	Davis High School	Gordon	72	1
10/15/2007	Mountain View High School	Gordon	13	1
10/31/2007	Viewmont High School	Richards	350	4
11/1/2007	Viewmont High School	Wewer	350	3
11/10/2007	Tri-City Centerville	Gordon	67	1
11/12/2007	AMES School	Gordon	108	1
11/14/2007	Granstville Middle School	Gordon	721	1
11/15/2007	Butler Elementary	Richards	120	1
11/16/2007	Alta Rustler Lodge	Gordon	62	1
11/19/2007	Alta Goldminer's Daughter	Gordon	60	1
11/19/2007	Treasure Mountain Middle School	Garcia	187	4
11/20/2007	Treasure Mountain Middle School	Morris	175	4
11/21/2007	Maeser High School	Gordon	97	1
11/28/2007	Park City Academy	Gordon	38	1
11/29/2007	Park City High School	Richards	258	4
11/30/2007	Park City High School	Morris	200	4

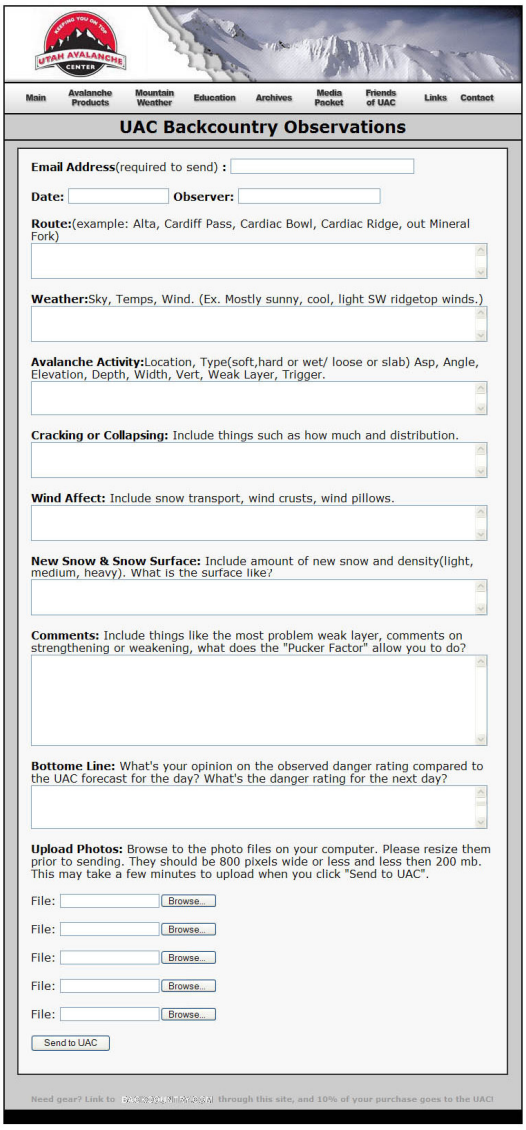
12/1/2007	Tri-City Springville	Gordon	52	1
12/4/2007	Bonneville Junior High School	Spice	950	1
12/5/2007	UVSC	Trotter	8	1
12/6/2007	Churchill Jr. High	Richards	247	1
12/6/2007	REI- Sandy	Gordon	61	1
12/7/2007	Evanston High School	Gordon	332	1
12/7/2007	Evanston Middle School	Gordon	324	1
12/7/2007	Evanston-Davis Middle School	Gordon	339	1
12/11/2007	South Davis Jr. High School	Whatley/Garcia	476	6
12/13/2007	Pleasant Grove Jr. High School	Spice	64	1
12/14/2007	Indian Hills Middle School	Morris	1252	2
12/17/2007	Our Lady of the Snows	Garcia	3	1
12/18/2007	Park City Rotary Club	Gordon	81	1
12/19/2007	Rio Tinto	Gordon	13	1
12/19/2007	North Summit Middle School	Spice	332	1
12/19/2007	North Summit High School Coalville	Spice	313	1
12/19/2007	South Summit High School- Kamas	Spice	450	1
12/27/2007	Snowbasin Ski Foundation	Wewer	18	1
1/3/2008	Hillside Middle School	Spice/Richards	611	7
1/3/2008	Rowland Hall St. Marks	Cardinale	532	1
1/5/2008	Westminster College	Gordon	35	1
1/8/2008	REI- 33rd South	Gordon	101	1
1/9/2008	Willow Creek Middle School	Gordon	537	1
1/10/2008	Brighton Ski Resort	Gordon	225	1
1/11/2008	Weber County Search and Rescue	Gordon/Wewer	33	1
1/12/2008	Weber County Search and Rescue	Gordon/Wewer	35	1
1/14/2008	Clayton Middle School	Whatley	562	1
1/14/2008	St. Ambrose Church	Whatley	21	1
1/16/2008	Snowbird Steeps Camp	Gordon	11	1
1/17/2008	Wasatch Co. Search and Rescue	Gordon	98	1
1/17/2008	REI- Sandy	Whatley	55	1
1/21/2008	Kearn River Engineering	Gordon	31	1
1/22/2008	Soda Springs Mine	Scroggin	26	1
1/23/2008	Itineris Early College High School	Spice	129	1
1/23/2008	Alpine Scout Group	Whatley	37	1
1/23/2008	University of Utah	Gordon	16	1
1/23/2008	N. Salt Lake Scout Group	Spice	23	1
1/24/2008	Olympus Junior High School	Richards	873	1
1/24/2008	Chalk Creek Snowmobile Club	Scroggin	27	1
1/28/2008	Grace Lutheran	Whatley	63	1
1/29/2008	REI- Sandy	Richards	27	1
1/31/2008	Altamont High School	Gordon	129	1
1/31/2008	Altamont Middle School	Gordon	146	1
1/31/2008	Duchesne Co. Search and Rescue	Gordon	39	1
2/1/2008	Entheos Academy	Morris	52	1
2/5/2008	Brighton Backcountry 101	Gordon	12	1
2/6/2008	Brighton Backcountry 101	Gordon/Richards	10	1
2/6/2008	Heber Scout Group	Gordon	28	1
2/7/2008	River View High School	Lee	817	2
2/7/2008	Academy at Canyon Creek	Lee	18	1
2/7/2008	Utah County Search and Rescue	Gordon	59	1
2/8/2008	Entheos Academy	Morris	47	1
2/8/2008	Oakley School	Gordon	112	1

2/11/2008	Midvale Middle School	Whatley	792	1
2/11/2008	Solomon Sports- Ogden	Gordon	33	1
2/11/2008	Weber County Library	Gordon	41	1
2/13/2008	Toole County Search and Rescue	Gordon/Kobernik	25	1
2/13/2008	Heber Scout Group	Spice	37	1
2/15/2008	Snowbird Steeps Camp	Gordon	21	1
2/16/2008	Toole County Search and Rescue	Gordon/Helgeson	22	1
2/20/2008	Canyon View Junior High School	Helgeson	235	1
2/20/2008	San Rafael Junior High School	Helgeson	289	1
2/20/2008	Sandy Scout Group	Whatley	41	1
2/21/2008	Davis County Search and Rescue	Gordon/Hardesty	38	1
2/23/2008	Davis County Search and Rescue	Gordon/Helgeson	12	1
2/25/2008	Clarke Johnson Jr. High Tooele	Helgeson	1151	1
2/26/2008	Snowbird Patrol Level 1	Gordon	11	1
2/26/2008	Rich County High School	Spice	111	1
2/26/2008	Laketown Junior High School	Spice	152	1
2/26/2008	Heber Scout Leaders Roundtable	Helgeson	18	1
2/28/2008	Backcountry.Com	Gordon	37	1
2/28/2008	Roosevelt High School	Helgeson	200	1
2/28/2008	Roosevelt Public Talk	Helgeson	20	1
3/1/2008	Backcountry.Com Field Day	Gordon/Helgeson	62	1
3/2/2008	Rocky Mountain Rescue Dogs	Gordon	10	1
3/5/2008	Utah State Board of Education	Gordon	49	1
3/6/2008	Orion Junior High School	Richards	213	4
3/10/2008	West Hills Middle School	Garcia	37	1
3/22/2008	Oakley School Field Day	Helgeson	8	1
4/9/2008	Snowbird Patrol Level 2	Gordon	9	1
		Total	**17,444**	**129**

Craig Gordon demonstrates to other snowmobilers how to stop by the side of the trail to examine fresh wind slabs. His snowmobile with the Utah Avalanche Center logo is an effective conversation starter and an opening for contacts and avalanche education in the backcountry.

Backcountry Observers Program

A huge thanks goes to all the backcountry travelers whose steady stream of information keeps our email in-boxes and phone answering machines full. Throughout northern Utah, observers helped keep us informed about avalanche activity and their thoughts on snow pack stability, along with awesome photos of recent avalanches and snow profiles. Whether it's just once a season, on a weekly basis, or multiple times a week, every observation we receive is another piece in the snow stability puzzle we're trying to complete.



Brett Kobernik set up a new web based observation form this year for our observers to use. The result was an easier method for people to report conditions, upload photos and produce more detailed and organized observations for the forecasters to read. We plan to make a similar form available to the public in 08-09.

Since we can only have one to two of our forecasters in the field each day, and we have a large area to cover, these extra eyes and brains out there are a tremendous help. The remarkable quality and quantity of the observations we receive makes the Utah Avalanche Center the envy of the forecast centers around the US.

In addition, for over 15 years, the Friends of the Utah Avalanche Center's has supported an excellent paid volunteer observer's program, which provides indispensable snowpack information to the staff forecasters from knowledgeable backcountry travelers. These people receive a very small token of thanks each time they make the effort after a long day in the backcountry to email or phone in an organized observation, often accompanied by photos and pit profiles. The extra effort made by these knowledgeable observers makes a huge difference in the morning for us. There have been big changes in the last 5 years, including many more observers, an increased quality in observations and the use of the Internet to send information. This past winter we received over 650 observations from the Friend's network. We continue to look for growth in the observer network in the Logan, Ogden, Western Uinta, and Provo area mountains - information seasoned by many years of skiing, boarding or snowmobiling in an area provides invaluable local knowledge.

UAC Media Contacts 2007-08

Date	Staff	Agency	Subject	National or Inter-national Television Interview	National or Inter-national Television Informati	National or Inter-national Print Media	Local Television Interviews	National Radio Interviews	Local Radio Interviews	Local Print Interviews
10/18/07	Gordon	KSL TV	Current Avalanche Danger				1			
12/7/07	Kobernik	KSL TV	Current Avalanche Danger				1			
12/7/07	Kobernik	SL Tribune	Current Avalanche Danger							1
12/7/07	Kobernik	KSL Radio	Current Avalanche Danger						1	
12/7/07	Kobernik	Fox 13 TV	Current Avalanche Danger				1			
12/7/07	Kobernik	Std Examiner Ogden	Current Avalanche Danger						1	
12/7/07	Hardesty	KSL Radio	Current Avalanche Danger						1	
12/9/07	Hardesty	KBYU TV	Current Avalanche Danger				1			
12/13/07	Tremper	KSL TV	Close Calls - Avalanche Danger				1			
12/13/07	Tremepr	SL Tribune	Close Calls - Avalanche Danger							1
12/13/07	Gordon	Fox 13 TV	Close Calls-Current Avalanche Danger				1			
12/13/07	Gordon	SL Tribune	Close Calls-Current Avalanche Danger							1
12/18/08	Tremper	Park Record	General Avalanche Information							1
12/21/07	Tremper	Fox 13 TV	Avalanche Warning				1			
12/22/07	Gordon	Motor Sports World	Avy Center Snowmobile Partnerships	1			1			
12/23/07	Gordon	Fox 13 TV	Canyons Fatality				1			
12/23/07	Gordon	Channel 2 TV	Canyons Fatality				1			
12/24/07	Gordon	SL Tribune	Canyons Fatality							1
12/24/07	Gordon	CNN	Canyons Fatality		1					
12/24/07	Hardesty	KSL TV	Canyons Fatality				1			
12/24/07	Hardesty	Park Record	Canyons Fatality							1
12/24/07	Kobernik	KSL TV	Current Avalanche Conditions				1			
12/26/07	Kobernik	Channel 2 TV	Current Avalanche Conditions				1			
12/26/07	Kobernik	Deseret News	Current Avalanche Conditions							1
12/26/07	Kobernik	KSL TV	Current Avalanche Conditions				1			
12/26/07	Kobernik	KSL TV	Snowmobile Information				1			
12/26/07	Gordon	Park Record	Uinta Avy Accident							1
12/26/07	Gordon	KSL Radio	Uinta Avy Accident						1	
12/26/07	Gordon	Associated Press	Uinta Avy Accident			1				
12/26/07	Gordon	Metro News	Uinta Avy Accident			1				
12/28/07	Tremper	Ski Patrol Magazine	Profile on Bruce Tremper			1				
12/29/08	Tremper	Fox 13 TV	Avalanche Conditions				1			
12/29/07	Gordon	KSL Radio	General Avalanche Information						1	
12/31/07	Gordon	SL Tribune	Uinta Avy Accident							1
12/31/07	Tremper	KSL TV	Uinta Avy Accident				1			
12/31/07	Gordon	Ogden Examiner	Uinta Avy Accident							1
12/31/07	Gordon	KSL Radio	Uinta Avy Accident						1	
12/31/07	Gordon	Associated Press	Uinta Avy Accident			1				
12/31/07	Gordon	Metro News	Uinta Avy Accident			1				
12/31/07	Gordon	Park Record	Uinta Avy Accident							1
1/1/08	Tremper	Good Morning America	Avalanche Conditions	1						
1/1/08	Tremper	Fox 13 TV	Avalanche Conditions				1			
1/1/08	Gordon	Channel 2 TV	Uinta Avy Accident				1			
1/1/08	Gordon	Fox 13 TV	Uinta Avy Accident				1			
1/1/08	Gordon	Channel 4 TV	Uinta Avy Accident				1			
1/2/08	Gordon	Park City TV	Currant Avalanche Conditions				1			
1/10/08	Tremper	Ogden Standard Examiner	Avalanche Conditions							1
1/10/08	Tremper	High Country News	Interview about general avalanche info			1				
1/10/08	Tremper	KPCW Radio	1/2 hour interview on avalanches						1	
1/12/08	Tremper	Salt Lake Tribune	Avalanche Conditions							1
1/14/08	Hardesty	Today Show	Western Avalanche Fatalities	1						
1/14/08	Hardesty	KPCW	Uinta Avy Accident and Recovery						1	
1/14/08	Gordon	SL Tribune	Uinta Avalanche Close Call							1

1/14/08	Gordon	Park Record	Uinta Avalanche Close Call							1
1/16/08	Gordon	SL Tribune	Avalanche info for Snowmobilers							1
1/16/08	Gordon	Ogden Examiner	Avalanche info for Snowmobilers							1
1/16/08	Gordon	Deseret News	Avalanche info for Snowmobilers							1
1/16/08	Gordon	Channel 2 TV	Avalanche info for Snowmobilers				1			
1/16/08	Gordon	Fox 13 TV	Avalanche info for Snowmobilers				1			
1/16/08	Gordon	Channel 4 TV	Avalanche info for Snowmobilers				1			
1/21/08	Tremper	KCPW	Interview on avalanche conditions						1	
1/22/08	Tremper	National Public Radio	Information on avalanches					1		
1/26/08	Lees	ABC National News	US Avalanche Information	1						
1/28/08	Hardesty	KSL TV	Avalanche Conditions				1			
1/30/08	Tremper	CBS News (national)	Avalanche Conditions	1						
1/31/08	Tremper	History Channel	Information on avalanches		1					
2/7/08	Tremper	National Geographic TV	Help planning documentary info and logistics		1					
2/7/08	Hardesty	NBC Nightly News	US Avalanche Information	1						
2/13/08	Lees	Allentown Newspaper	Utah avalanche info							1
2/18/08	Gordon	Channel 2 TV	Know Before You Go Program				1			
2/19/08	Tremper	Mountain Gazette	Interview about avalanches			1				
3/20/08	Gordon	KSL TV	Spring Avalanches				1			
4/14/08	Hardesty	KUER	Spring Avalanches							1
5/21/08	Tremper	Skiing Magazine	Season Summary			1				
5/23/08	Tremper	Channel 13	Wet Avalanche Special Advisory				1			
5/23/08	Tremper	KNRS Radio	Wet Avalanche Special Advisory						1	
6/4/08	Tremper	Wasatch Journal	Bob Athey profile							1
			Total	**6**	**3**	**8**	**29**	**1**	**10**	**21**

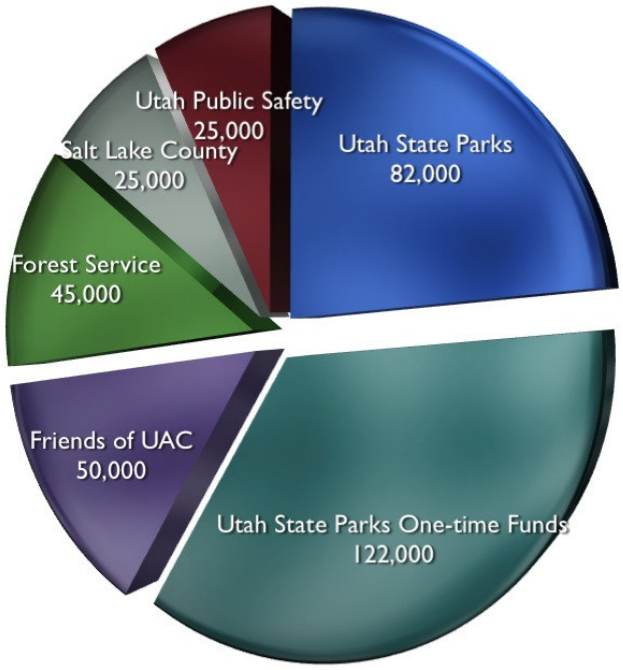
Budget

The Utah Avalanche Center is the epitome of a successful partnership organization. Although we are a Forest Service program, in these hard economic times, most of the funding comes from outside the Forest Service. Many thanks to our valued partners including Utah State Parks and Recreation, the Friends of the Utah Avalanche Center, Salt Lake County and Utah Public Safety, Division of Homeland Security.

This year, in addition to our regular funding, the Utah Legislature appropriated $122,000 in one-time funding through Utah State Parks for avalanche outreach and education. This valuable funding along with some matching funds from the Friends of the Utah Avalanche Center helped us to teach additional avalanche classes, produce an avalanche awareness campaign that utilized billboards, public service announcements, stickers, brochures, web tutorials, web site development, three snowmobile trailers with avalanche awareness graphics, additional beacon practice sites, Are You Beeping signs at trailheads, education for over 200 search-and-rescue personnel from six different counties and extra personnel for doing outreach throughout Utah. This funding will likely save man lives in coming years. We hope that the Friends of the Utah Avalanche Center can continue to lobby to make this funding an annual partnership.

Total funding for northern Utah is $215,000 with $15,000 for the Moab and Manti Skyline program administered by the Manti-La Sal National Forest. The programs in Logan, the western Uinta Mountains and the Manti Skyline are funded by Utah State Parks.

Funding to Utah Avalanche Center 2007-08



Where The Money Goes 2007-08