OUR MISSION

The Utah Avalanche Center’s mission is to keep people on top of The Greatest Snow on Earth® by providing avalanche forecasting, education, and awareness throughout the State of Utah.
This winter throughout the state was literally “off the charts” in terms of snowfall with most drainage basins in the state ending up well over 200% of the median snow water equivalent. It felt like it never stopped snowing. It’s been a wild ride over the last few winters with the pandemic, last winter’s mid-winter drought, and then this winter’s record-breaking snowfall. Throughout it all, our staff, supporters, partners, and the entire community have worked together to deliver the best avalanche information and education to the backcountry community.

The season started strong with a high demand for in-person awareness events and a return to an in-person USAW. We launched an entirely new Know Before You Go program in October, which includes an exciting, interactive presentation, a new website, an online learning platform, and a powerful feature film. To the Hills and Back debuted at the Banff Film Festival, was included in the Banff World Tour, and won numerous awards at other film festivals.

With so much snow, the challenges this winter were different than the previous winters. On many days, just getting to the trailheads for field work or classes or simply getting to the office was a challenge. It was hard to investigate and analyze avalanche activity because so many slides happened during storms or were immediately covered by new snow from subsequent storms. Additionally, such deep snow cover created avalanche hazards in many more places including low-elevation slopes in the foothills. With road and trailhead challenges, we enjoyed seeing the creative locations people recreated this winter.

Despite the challenges, deep soft snow was the norm, and there were countless powder days. Overall, the snowpack was solid and strong, but with such big storms, there were also big avalanches. Sadly, there were three avalanche fatalities. Read more about storms in the season summary on page 12 and accidents on page 15.

Our staff worked hard and once again displayed a deep dedication to our mission and our users. The UAC is committed to serving the public and wouldn’t exist without their support. We wish everyone a great summer, and can’t wait to see everyone next fall.

MARK STAPLES
DIRECTOR
Forest Service UAC

CHAD BRACKELSBERG
EXECUTIVE DIRECTOR
Nonprofit UAC
POINTS OF INTEREST

SEASON OF RECORDS
_record snowfall, record # of avalanches, record # of powder days._

219% SNOWFALL
_Some areas across Utah received over 900” of snow._

KBYG RELAUNCH
_We relaunched KBYG with all new learning materials & feature-length film._

NEW STAFF MEMBERS
_Added 2 new staff members to our team._

NO INJURIES
_No injuries throughout 1,200 field days._

IN-PERSON SNOW & AVALANCHE WORKSHOP
_We returned to in-person USAW, in Kamas, UT._
History
In the mid 1970s, avalanche information was recorded on a phone line in the Salt Lake District Office of the Wasatch National Forest.

The UAC officially started 43 years ago in 1980 when the Forest Service and the National Weather Service (NWS) signed an agreement to formally establish the Utah Avalanche Forecast Center at the NWS office in Salt Lake City with three basic charters - issue avalanche forecasts, provide avalanche education, and issue mountain weather forecasts.

33 years ago in 1990, the nonprofit Friends of the UAC was formed to bridge the gap between the available funding and the actual expenses of running the avalanche center and assure long-term sustainability. The collaborative partnership between the Forest Service, collectively known as the Utah Avalanche Center, has grown to a staff of 19, working across Utah delivering avalanche forecasts, awareness, and education. Our forecasts inform the public about what types of avalanches to expect, where they might occur, how big they may be, how sensitive they are, and how to avoid them.

Forecasting
The forecasts are the most widely used UAC product. We forecast for 8 regions across the state from Moab to Logan. The public accesses these free forecasts in the following ways:

- UAC Desktop & Mobile App
- UAC IOS App
- Recorded Telephone Message
- Daily Radio KPCW Updates
- Daily E-Mail
- Dawn Patrol Hotline
Backcountry Observations
Forecasters, pro observers, and the public published 2,454 field reports that were viewed over 1.9M times. These observations include details about what people are seeing out in the backcountry and are the second most used source of avalanche information on our website. These field reports are a crucial source of information used by forecasters to create the daily avalanche forecast.

Awareness
The goal of avalanche awareness is to inform people of the dangers of avalanches and what they can do to decrease their risk. We accomplish this through in-person and virtual presentations and by meeting with backcountry users where they access the mountains.

Our primary awareness program is the Know Before You Go program (kbyg.org). We offer custom presentations on a variety of topics ranging from the science of avalanches to terrain management to snowpack updates. We also have our trailhead avalanche awareness program where we meet with backcountry users to discuss avalanche conditions at trailheads across the state.

Education
The UAC’s on-snow avalanche education program focuses on providing backcountry users with introductory avalanche classes. Basic avalanche education is the foundation of providing people with the tools they need to make good decisions in the backcountry and come home safely each day.

Our core classes include Introduction to Companion Rescue, Introduction to Avalanches (Backcountry 101, Motorized Backcountry 101), and Backcountry 201 classes. In addition, we provide Recreation Level 1 and 2 and Avalanche Rescue classes as needed to fill community demand.
The Backcountry Community

The UAC is an integral part of Utah’s ever-growing backcountry community. We count on users to be our eyes and ears so we facilitate a two-way flow of life-saving information and constant dialogue. As a public safety organization, it is vital that we maintain the trust of the backcountry community.

People trust that we are giving them accurate and current avalanche and mountain weather information so they can make good decisions and stay safe from avalanches. And we trust our users to share what they see in the backcountry to help us develop the best avalanche forecast possible. We could not exist without all the skiers, boarders, snowmobilers, snowshoers, and others who provide these observations.

We accomplish our work with the generous financial support of the backcountry community. We are a nonprofit that receives over half of our funding from individuals and businesses, people and organizations that believe in our mission. We truly appreciate every donor and their belief in us and what we do. Our work is a huge group effort to keep people on top of The Greatest Snow on Earth®.

100% GRATEFUL
FOR OUR COMMUNITY
“I choose to support the UAC because I consider it a cornerstone for the local community. In the winter, the snow report is the first thing I check in the morning even before I’m out of bed and Craig Gordon’s forecast and personality helps set the tone and jumpstart my day. The UAC keeps us all safe and gives us the knowledge to access the best snow. In my opinion, the organization is mission critical!”

Shawn B | Park City, UT

“Coffee and UAC forecasts are my winter morning ritual. The data the UAC provides tells a wonderful and evolving snowpack story that continually updates my safety mindset and baseline for winter fun. Thanks UAC!”

David Eyre | Torrey, UT

“Thank you for sharing the information! It was very helpful. We had a great day of instruction on and off the mountain, teaching the young men about avalanches and the backcountry. Thanks again for your help and all that you do for helping keep us informed about the avalanche conditions.”

Kyle Anderson | Vineyard, UT

“I just want to pass along to you and the team how valuable your services are at Utah Avalanche for me as a skier, both in bounds, and in the backcountry. Thanks to your outstanding education programs, I feel much better informed and prepared every time I put on my skis.”

Anthony Bourke | Park City, UT

Our Community

From Logan to Moab, we are constantly amazed and humbled by the generosity of our users and their unwavering willingness to help us fulfill our mission of saving lives – we are grateful for their support.

“The Utah Avalanche Center is an essential tool that my crew relies on daily. It is typically the basis of conversation as we prepare for our adventures. We appreciate the effort put forth and the consistency of the data to make the best decisions possible. Thanks UAC!”

Tim Wolford | Providence, UT

“As the CEO of a supporting brand, an AIARE BoD member, and lifelong BC skier, I want to say thanks again to you and your team. Your work and the results are really inspiring and so important to me and our community. Thanks again for all you do!”

Kim Miller | CEO Scarpa NA

“I find that the Utah Avalanche Forecast Center provides a wealth of excellent information, from the all-important daily forecasts, to the observations page, education tools, etc., that supports my ability to stay safe in the backcountry.”

Scott Plaine | SLC, UT

“I love this presentation (KBYG) and knowing that our students have some basic knowledge of avalanche awareness that may save their life or a friend’s life one day! Truly appreciate the time and effort put into this program!”

Robyn Bretzing | Teacher, Timp. HS
Season Breakdown

It wasn't a record-breaking winter; it was a record-smashing winter! The statewide snowpack snow water equivalent (SWE) peaked on April 8th at 30 inches of water and 219% of the median, but numbers don't tell the whole story.

Many upper-elevation SNOTEL sites (see the accompanying charts) hovered near 200%, but the real record-smashing locations were at mid and low elevations in places without remote sensors to record the snowfall. One of the most exciting numbers came from Alta, which recorded over 900 inches of snow, averaging 5 inches per day!

October - November - December

The mountains remained dry until October 22, when most places in the state received some snow. From that time forward, snowfall rarely stopped. There was a 2-week break in snowfall in mid-November across the entire state from accompanying charts. This short break in snowfall created a layer of faceted snow that produced avalanches until early January.

January

New Year’s delivered a huge storm with many large avalanches, especially in the Provo area mountains where the danger hit Extreme. Snow containing 8 inches of water fell during a three-day period.

On January 10, a huge, natural avalanche ran over Bridalveil Falls and damned the Provo River with a massive debris pile over 100 ft deep.

Another notable avalanche occurred on Gobblers Knob. The slide was 6-8 ft deep and about 3000 ft wide. By mid-January, snowfall had buried the facets from November so deep that the layer healed and no longer produced avalanches.
Moving into the second half of January, the danger would rise and quickly fall with each storm because the snowpack no longer contained a persistent weak layer.

February
A lull in snowfall in early to mid-February brought some of the lowest danger ratings across the state. That lull also weakened the snow surface slightly, but most of us didn’t think it would be a problem. We also didn’t anticipate the continuous heavy snowfall that would occasionally cause avalanches to break on that softer layer. Heavy snowfall returned by February 22 across most of the state.

March
From late February through March, snowfall really picked up, and the avalanche problems were slabs of new snow and wind-drifted snow. There were three significant challenges with this heavy snowfall.

One, it was hard for the danger to drop to Low. Just as the danger started dropping after one storm as the snowpack stabilized, another storm would arrive and ramp up the danger again.

Another challenge was that many avalanches would break just under the new snow, while some avalanches would break into slightly older snow. In some cases, avalanches would break on softer snow or crusts formed during the February lull in snowfall. It was hard to label these slides.

The final challenge was that tracking avalanche activity became hard since they would quickly fill in as more snow fell. It was hard to not only track the avalanches but also hard to visit them to get more info.

April
Snowfall continued into the first part of April with a well-publicized avalanche cycle in Little Cottonwood Canyon. On April 6, snowfall suddenly stopped, and the sun came out, triggering a historic wet snow avalanche cycle in Little Cottonwood Canyon.

Wet avalanches, both wet loose and wet slab, occurred around the state with such a sudden shift in the weather.

Summary
Conditions were remarkably similar across the state. All areas had a persistent weak layer from mid-November that produced slides into early January. All areas also had some of the lowest danger ratings during a lull in snowfall in mid-February. That lull created a softer layer of weak-ish snow. It seemed more problematic in the Provo area and La Sal mountains. It produced spotty avalanches mixed in with other avalanches breaking within the recent storm snow.
Some of the most stable conditions were in the Skyline region, where the snowpack was generally deep and strong, except in Huntington Canyon, which had a much different snowpack that led to a significant avalanche cycle that closed the road for about a week in mid-March.

Another unique aspect of this winter was the deep snow at low elevations. In most winters, low-elevation snow comes and goes as the sun and warm temperatures melt it away. Since it rarely stopped snowing for very long, the snowpack kept growing at low elevations. This caused two issues.

The first was that avalanches happened in many places where we weren’t accustomed to seeing them, impacting many more people who don’t normally travel in avalanche terrain. The second issue was that avalanches starting at higher elevations could run farther because so much vegetation and terrain roughness was covered.

Wrap-Up

It was an amazing winter with tons of great powder riding on all elevations and aspects. With such good coverage, people were able to spread out vs. other winters when usage is more concentrated. Sadly, the winter didn’t go by without tragedy, and there were three avalanche fatalities.

Forecasts Issued 1202
Field-Days 621
Avalanches Reported 1188
Human-Triggered Avalanches 395
People Caught & Carried 92
Partial or Full-Burial 14
Avalanche Fatalities 3
AVALANCHES & ACCIDENTS

This season Utah had three tragic avalanche fatalities, each with a unique set of circumstances. The third fatality of the year was a roof avalanche. This is only the second recorded roof avalanche fatality in Utah. With the copious amount of snow this winter, many mountain homes had heavy snow accumulation on their roofs that became unstable when temperatures warmed.

WEBER CANYON | WESTERN UINTA MOUNTAINS
MARCH 09, 2023 • 2 SKIERS BURIED AND 1 KILLED
Two skiers in a guided group with Park City Powder Cats were caught in an avalanche on private terrain on their ninth run of the day. Both were fully buried. One skier was more shallowly buried and was recovered alive. The second was buried much deeper and did not survive despite an organized and rapid response.

The avalanche was a hard slab 2-6 feet deep that failed on a layer of facets that likely formed during the first few days of February. What made this avalanche surprising is that there had been no notable avalanche activity in the Uinta mountains on a similar layer and there was no subsequent activity as well. Read the full report here: bit.ly/2023-03-09-Accident

POLE CANYON | OQUIRRH MOUNTAINS
MARCH 27, 2023 • 1 SNOWMOBILER BURIED AND KILLED
Two snowmobilers ascended Ophir Canyon and were descending a large slope into Pole Canyon, a place they were very familiar with. The avalanche was massive. It broke 4,250 feet wide, averaging about 3 feet deep, and running 2,360 feet vertical.

The first rider was able to escape to his left while his brother, who was behind him, was caught, carried, fully buried about 3 meters deep, and sadly did not survive. Utah County Search and Rescue responded and were able to recover the victim late that evening.

The UAC had not seen a faceted layer like the one in this avalanche since around New Year’s. One reason may have been the shallow nature of the snowpack in this bowl which was just over 4 feet while nearby on a sheltered lower elevation slope, the snow depth was nearly 11 feet. Read the full report here: bit.ly/2023-03-27-Accident

BIG COTTONWOOD CANYON | CENTRAL WASATCH MOUNTAINS
MARCH 27, 2023 • 1 HOMEOWNER BURIED AND KILLED
A cabin resident was possibly trying to clear snow and ice off the roof in the afternoon of April 17 when the snow on the roof avalanched. Tragically the resident was working alone and reported missing the next day. Unified Police responded to the cabin and found him buried and deceased.

There had been roof avalanches happening sporadically throughout the winter including a very close call on March 15 in the Town of Alta when a 9-year-old boy was buried but recovered alive. Another close call happened in the middle of March in the Town of Brighton, but the resident was able to jump out of the way at the last moment and was only partially buried. Read the full report here: bit.ly/2023-04-17-Accident
EDUCATION PROGRAM

Our Team
Our team of UAC Educators is comprised of 30 professionals with nearly 200 years of experience in avalanche education, forecasting and guiding. Whether you are a first-time backcountry user, or a seasoned rider looking to get a refresh, our crew is there to help you take the next best step in your avalanche education journey.

Season Overview
This year our Backcountry 201: Introduction to Risk course returned after a successful pilot season in ‘21/’22. This course bridges the gap between introductory level on-snow education and recreational courses. We offered four Backcountry 201’s this season with 60 students total, and are eager to offer more Backcountry 201’s next season.

The UAC also introduced its Instructor Mentorship Program during this season, with the mission of providing entry level work and mentorship opportunities to new and incoming snow and avalanche professionals. Our core instructor team is not only here for our students, but the next generation of avalanche educators.

As the mountains of Utah become more populated, teaching courses and navigating crowded trailheads and popular riding areas is a top priority. We have been working to offer courses in less familiar, and new to many, areas. The student feedback has been overwhelmingly positive and helps continue to grow our course offerings in new and less-frequented locations across the state.

Our season closed-out in style, with 200% snowpack on March 15th, and our final course of the season -- And what a season it was! From historical snowfall, to massive natural avalanche cycles, and plenty of incredible learning moments along the way, this winter has been one for the books.

Until next season, our team wishes you safe travels, a cool summer, and happy turns wherever your path leads!
AWARENESS PROGRAM

What a winter! Our avalanche awareness season kicked off strong in the fall - we attended ski swaps, sales, movies, and many more community events. Throughout the entire season, we participated in over 50 awareness events and reached over 5800 people with avalanche safety information.

Season Overview
We continued to meet many backcountry travelers at trailheads with our Trailhead Avalanche Awareness Program (TAAP). Our TAAP events are meant to bring current avalanche information to the point of departure so those who are not familiar with UAC products, can learn about them. We go over the day’s forecast, practice with rescue equipment, and offer resources for further learning. This season we held 15 events around the state and reached over 1300 people.

We ran four Community Avalanche Rescue Practices (CARP) and helped 426 people better learn how to use their avalanche transceiver. Everyone from young kids to seasoned backcountry travelers participated. These free events in the fall are a great way to learn about avalanche transceivers or brush up on your skills.

We hosted the 4th Annual Avalanche Awareness week the first week of December. We kicked off the week with a media and CARP event at Sugarhouse Park. Partners like the Division of Outdoor Recreation, Black Diamond, Mammut, National Weather Service, Salt Lake County Search and Rescue, LifeFlight, Wasatch Backcountry Rescue. Utah Snowmobile Association, WNDR Alpine, and OnX Maps joined in our effort to raise awareness of avalanche safety. KSL, KUTV, FOX, and ABC4 all covered the event spreading the message across the state.

We published our monthly newsletter, The Powder Cloud, as a means to highlight specific happenings at the UAC. The newsletter is a great way for us to share important information about weather, snowpack, fundraising, events, tech tips, etc. We are already scheduling events for next year and hope to have continued success with our outreach programs.
This season, we debuted the third major rebuild of the Know Before You Go program since its inception in 2004. We partnered with the National Avalanche Center, Colorado Avalanche Information Center, Northwest Avalanche Center, and Avalanche Canada to undertake the largest avalanche education project ever in the U.S.

Complete with a brand-new presentation, a new website, and a new dynamic online learning platform; we were extremely excited to debut the program to our backcountry community.

We partnered with Sherpas Cinema to produce the program’s feature-length film *To the Hills and Back*.

The film received terrific feedback from around the world and has won several awards, including the winner of Mountain Culture Film Award at the Whistler Film Festival, winner of the Prix Du Public (People’s Choice Award) at the Fance Banff Film Festival, second place for the Best Activism Award at the Sheffield Adventure Film Festival, and official selection at both the Banff Mountain Festival World Tour and the Vancouver International Mountain Film Festival. If you missed the showings in Utah, watch for future Banff Mountain Film Festival tour dates.

**KBYG Around the Utah**

We presented to nearly 4,500 in-person attendees and more than 2,800 virtual students across the entire state. Eager students, both experienced and new to the backcountry, continuously met our KBYG instructors with thoughtful questions and attentive minds. This enthusiasm lasted late into the season, thanks to record-setting snowfall.

Additionally, the program made significant strides in educating K-12 students in Utah, doubling the number of youth attendees from the 2021-2022 season. The program also reached more motorized users in Utah as we presented eight motorized talks for snowmobile shops and clubs.

**Looking Ahead**

Ahead of next season, the KBYG program is working on translating the presentation for the Spanish, French, Italian, German, Japanese, and Switzerland communities. If you are interested in hosting a KBYG presentation next season for your school, club, ski or snowboard team, company, or any group that recreates in the mountains, please contact the UAC.
The term crowdsourcing was coined in 2016. Twenty-nine years earlier, in 1987, the UAC began crowdsourcing backcountry information with the official launch of the observation program.

About the Program
We were the first avalanche center in the US to receive and publish public observations. Public backcountry observations are a vital piece of our forecasting operation, helping us keep eyes on many areas and mountainous regions that we lack information for, or do not have a daily avalanche forecast for already.

We openly accept backcountry observations on our website and have a group of 131 professional observers across the state. Backcountry observations are crucial for writing accurate avalanche forecasts. A forecaster can see limited terrain on a field day, but we receive valuable information from dozens of locations in each forecast region daily with public observations.

In addition to helping with the forecast, users read observations regularly. They are one of the most valuable tools for learning about backcountry and avalanche conditions.

BY THE #’S

TOTAL OBSERVATIONS 2,454
STATEWIDE OBSERVERS 131
SOCIAL MEDIA

INFORMATION EFFICIENCY

Social media is critical to the UAC in order to help deliver avalanche information and educational content to our backcountry community. These channels help us deliver information efficiently and effectively to a broad audience.

- 91k followers
- 2.6m video views
- 12.8m impressions & engagements
- 355 videos created

- 31k followers
- 1.3m video views
- 3.7m impressions & engagements
- 116 videos created

- 19.5k followers
- 2.6m video views
- 1.3m videos created

- 11k followers
- 770k video views
- 12.8m videos created

#UTAVY
OUTREACH & MESSAGING

The following numbers represent how the UAC provides information to the public by medium throughout our season.

In addition, the UAC regularly broadcasts forecasts by daily call-ins to KPCW radio and distributes avalanche-related news and education via weekly Fox 13 news appearances.

- Our website was accessed more than four million times from locations across the globe.
- We share daily forecast, newsletters, event happenings, and important information to over a million users.
- Information is quickly accessed using our mobile app that provides all our snow & avalanche information on your mobile device.

<table>
<thead>
<tr>
<th></th>
<th>By the #’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecast Email’s Sent</td>
<td>1.35m</td>
</tr>
<tr>
<td>Email Subscribers</td>
<td>16,000k</td>
</tr>
<tr>
<td>Website Page Views</td>
<td>4.3m</td>
</tr>
<tr>
<td>Mobile App Use Sessions</td>
<td>253k</td>
</tr>
</tbody>
</table>

OUTREACH
Avalanche forecasting provides the information necessary to stay safe in avalanche terrain. Our team publishes daily avalanche forecasts using field observations, stability testing, weather data, and other tools and technology.

Avalanche education is necessary to deepen one's knowledge as a backcountry user and prevent avalanche accidents. Our team provides on-snow education and continuing education for professionals and the general public.

Avalanche awareness empowers anyone to understand the dangers of avalanches. Through Know Before You Go, trailhead events, and other outreach opportunities, our team provides free avalanche information to people of any experience level.

The UAC's programs are made possible by working toward a strategic vision of a resilient and financially stable organization. Our team works year-round to carry out essential planning, training, fundraising, and other operational tasks to fulfill the UAC's mission.
PARTNERSHIPS & DONORS

Motorized Support
Young Powersports in Centerville and Polaris donated two 2021 Pro RMK’s for the season. Karl Malone Powersports and Ski-Doo donated two 2021 Summits. Northstar of Logan and Polaris donated two 2022 Pro RMK’s. We use these machines to monitor the snowpack across the state of Utah. We also use these machines to teach life-saving classes.

Without support for our motorized work, we would not be able to accomplish our mission and ultimately save lives!

Resort Partnership
Utah ski resorts once again graciously donated lift tickets to the UAC. We continue to enjoy a great relationship with Utah resorts, communicating regularly on snow conditions and cooperating on avalanche education for professionals and the public.

Thank you to Ski Utah, Alta, Beaver Mountain, Brighton, Deer Valley, Park City Resort, Powder Mountain, Snowbasin, Snowbird, and Solitude for supporting this program.
THANK YOU SPONSORS

EXTREME
- Black Diamond
- MAMMUT
- SALT LAKE COUNTY
- KÜHL
- PARK CITY

HIGH
- backcountry
- MOMENTUM
- PURSUIT GROUP

CONSIDERABLE
- 19SPORTS
- Axis
- POWDER MOUNTAIN
- ROSSIGNOL
- BLIZZARD
- ARMADA
- SUUNTO
- UTAH FOOD SERVICES
- LINTA
- FLYLOW
- clearlink

MODERATE
- ORTOVOX
- POLARIS
- POC
- ALPHA COFFEE
- ALSCO
- ARVA
- Dynastar

LOW
- PRIMAL
- SALÉT
- SCARPA
- SKIMO
- AMERICAN MOUNTAIN ASSOCIATION
- EVO
- SMITH

PARTNERS & SPONSORS | PAGE 24
The Utah Avalanche Center truly is a team effort, from every individual donor, local business, and large sponsor -- every community member plays a vital role in helping us Keep You on Top.

Thank you to each donor, business, sponsor and supporter who has helped to make our work possible for 43 years.