

2017-2018 Annual Report



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Cover Photo: VandenBos

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Acknowledgements

The Avalanche Center could not operate in its current capacity without the generous support of our community. Thanks to all the kind souls who accompanied us in the field and/or provided us with critical information about what they were seeing during their rides or tours. The following individuals were regular contributors and/or field partners: Terry O'Connor, Peter Carse, Ed Binnie, Jeremy Lato, Brad Hatch, and Sam Linnet.

We'd like to extend a special thanks to Kurt Nelson, Zach Poff, Susan James, Steve Frost, Sarah Stalker, and Greg Stuart. These USFS staff went above and beyond the call of duty to support the avalanche center.

We receive about half of our operating revenue from the Friends of the SAC. This group of amazing, dedicated volunteers raises money through sponsorships, donations, and events.

Advisory/Homepage Sponsors



Professional/Agency Partners



Additional Support



From the Director

The mission of the Sawtooth Avalanche Center is to provide actionable weather and avalanche information and education to people recreating, working, and/or travelling in the mountains of south central Idaho. The Friends launched an expanded Avalanche Awareness education effort this year, spreading the avalanche gospel to more local students than ever before. We'll also remember this year for the good mountain biking conditions through early February in the south Valley – ugh - and the big storms and impressive avalanche cycles that followed in March and April. Due to a staff member's December injury and surgical repair, we juggled our responsibilities. Ethan, Matt, and our stellar Forecasting Intern Ben not only kept up with the workload...they excelled. A huge thanks to them, and the Friends' Board and Staff, for "kicking butt and taking names." I'd also like to thank all of the individuals, businesses, and agencies that help the avalanche center provide valuable public safety information. The SAC wouldn't be what it is without the amazing community support we receive. Happy turns to all this spring and summer – be it on boards, sleds, dirt bikes, mountain bikes, kayaks, or whatever strikes your fancy.

Sincerely,

Scott Savage
Director, Sawtooth Avalanche Center

Season Highlights

- Our first General Snow and Weather Information product was issued on October 23rd. Daily Avalanche Advisories started early on November 30th and continued through April 15th. In total, we produced 138 Daily Avalanche Advisories this winter (the most in SAC history) in addition to 9 General Snow and Weather Information updates.



A natural wind slab avalanche removed the unique wind texturing seen in this photo taken in the Eagle Creek Drainage north of Ketchum.

- We issued 3 Avalanche Warnings and 12 days of HIGH avalanche danger (compared to 9 Warnings and 22 days of HIGH danger last year).
- There were no fatalities within the advisory area for the 4th year in a row – knock on wood! Although two snowmobilers, one skier, and one car were caught and partially or fully buried in avalanches, no one was seriously injured.

- Daily Avalanche Advisories began on November 30th – the earliest start in SAC history. On cue, we entered a long high-pressure induced drought. Lower Titus weather station recorded just 3” of snow from December 4th through December 18th.
- A widespread wet slab avalanche cycle occurred on March 23rd as 3-day snow water equivalent totals reached nearly 3” in favored locations. Notable wet slab avalanches would also occur in April in the Warm Springs and Deer Creek drainages, on Cobb Peak in the Pioneer Mountains, on Williams Peak in the Sawtooths, and in the Boulders near Galena Summit.
- Of our 165 days in the field, we used skis 76% of the time, snowmobiles 19%, and hiked or used binoculars from the highway 15% of the time (some days were “combo” days, so the total is over 100%).
- Local professional groups contributed over 300 observations, and the public sent us nearly 150 observations – thanks! These observations are the equivalent of employing several additional avalanche forecasters, something we can’t afford.
- The Friends debuted the first annual Homegrown Film Festival to packed and enthusiastic audiences in Hailey and Sun Valley. The films featured local filmmakers and athletes along with a healthy dose of stunning Idaho scenery.



Filmmakers and athletes at the hugely successful Homegrown Film Festival

- Staff gave 12 interviews to local, regional, and national media outlets.
- Volunteers worked over 425 hours on Friends’ of the SAC fundraising events and over 4,000 hours in the field.
- Our advisory received over 245,000 views via the web, hotline and email subscriptions.
- Public outreach continues to be very successful through local newspapers, radio, and social media.

- SAC and the Friends of the SAC gave 49 educational presentations to both recreational and professional audiences. Our educational programs reached over 1,700 individuals this season.
- The US Forest Service increased it's funding levels for the SAC despite significant cuts in the agency's budget. The avalanche center is fortunate the USFS, and the Sawtooth NF specifically, continue demonstrating a commitment to providing quality avalanche information and education.
- The Friends of the SAC provided approximately 50% of our funding. The avalanche center would not exist in its current state without the Friends!

Staff

The Sawtooth Avalanche Center employs three full-time, seasonal employees and one intern during the winter season:

- **Avalanche Center Director:** Permanent Seasonal Federal Position
- **Lead Forecaster – Avalanche Specialist:** Permanent Seasonal Federal Position
- **Forecaster – Avalanche Specialist:** Seasonal Federal Position
- **Intern – Avalanche Specialist:** Seasonal Position



Scott Savage

Scott Savage returned for his sixth season at the avalanche center and fourth year as the Director. Prior to coming to the Sawtooth in 2012, Scott spent the better part of two decades as an avalanche forecaster and snow safety director at Big Sky Resort in Montana. He has frequently contributed articles to The Avalanche Review, written columns for regional newspapers and publications, and presented at international conferences and regional professional development seminars. Currently, Scott is a National Avalanche School instructor and serves on the Advisory Board of the American Avalanche Association. He considers each day that he learns more than he forgets to be a success.



Ethan Davis

Ethan's interest in snow started at Anthony Lakes, a mom-and-pop ski hill in rural Eastern Oregon. He attended the University of Idaho, where he earned his Bachelor of Science in Geography and a minor in Mathematics. Following an interest in winter storms he earned his Master's degree in Meteorology from Pennsylvania State University. After three years in a dark lab growing ice crystals, Ethan returned to the light as a forecaster in Alaska and Colorado before making his way home to Idaho. When not in the snow, you can find him, his wife Robyn and baby boy Arco fishing, biking or tying-in to climb at a local crag.



Matt Wieland

Matt moved on from the avalanche center in March, but we are happy to report that he will remain in the valley. Matt brought a rare combination of skills and experience: nearly a decade of active mitigation work, an advanced degree, a lifelong love for machines that burn oil, expert riding ability, a solid understanding of remote weather stations, impressive digital photography skills, mechanical aptitude...the list goes on. Matt's ability to wear many hats at once to simply "get things done" will be sorely missed - he is truly a modern renaissance man. We're hoping he'll have time to continue working with both the SAC and the Friends in some capacity in the future.



Ben VandenBos

Ben holds a Bachelor's of Science degree in Geology from the University of Montana and spent the last decade skiing the wild, grizzly bear filled mountains of his backyard. Ben, fooled by a record snow year last year, returned for his second season as the SAC's first "full-time" intern. Ben is a huge asset to the SAC, issuing advisories, taking beautiful photos, and observing large amounts of backcountry terrain.

Accomplishments

Public safety is the root of our mission. We achieve this through Daily Avalanche Advisories and weather products, education, and outreach. We take pride in seeking out new, better, or more efficient ways to give backcountry recreationists quality information to make sound decisions in the mountains. Some accomplishments for the 2017-2018 season:

- Taught another successful Motorized Level 1 Avalanche Course, following the American Avalanche Association's guidelines. This course has now reached 53 local riders in the last 4 seasons.
- We reorganized the main menu of our website to accommodate new resources for local human-triggered avalanches, and links to US accidents and national accident statistics and reporting.
- The Friends of the Sawtooth Avalanche Center, through a generous donation by Beverly and Michael DeChevrieux, hired an Education Coordinator to help expand offerings of basic avalanche education.

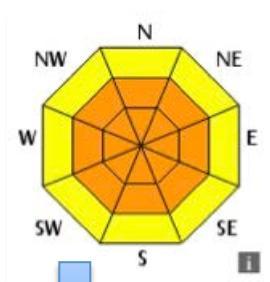
- Educated Wood River Valley youth, focusing on avalanche awareness and companion rescue.

New Avalanche Safety Information Signs



SAC Staff and the Sun Valley Resort – with support and collaboration from the Friends of the SAC, Sun Valley Ski Education Foundation, the BLM, regional avalanche centers, other ski resorts, and the National Avalanche Center - designed and implemented two avalanche information signs for Bald Mountain. The signs, posted on the northern and southern boundaries of the ski area, give actionable information to sidecountry skiers and snowboarders. A transceiver checker will light up green if the rider is wearing a transceiver in “send” mode.

Updating the “Danger Rose”



The danger rose was a valuable tool before the advent of Avalanche Problems. Avalanche Problems are an extension of the danger scale, and provide nuance and specificity to the day’s avalanche danger. Avalanche Problems are composed of four elements: the kind of expected avalanche, where that avalanche may exist in the terrain, the chances you could trigger it, and how big it will be. Because the Avalanche Problem content addresses the “where” question (at what elevation and aspect a particular type of avalanche is most likely to occur), the danger rose is redundant.

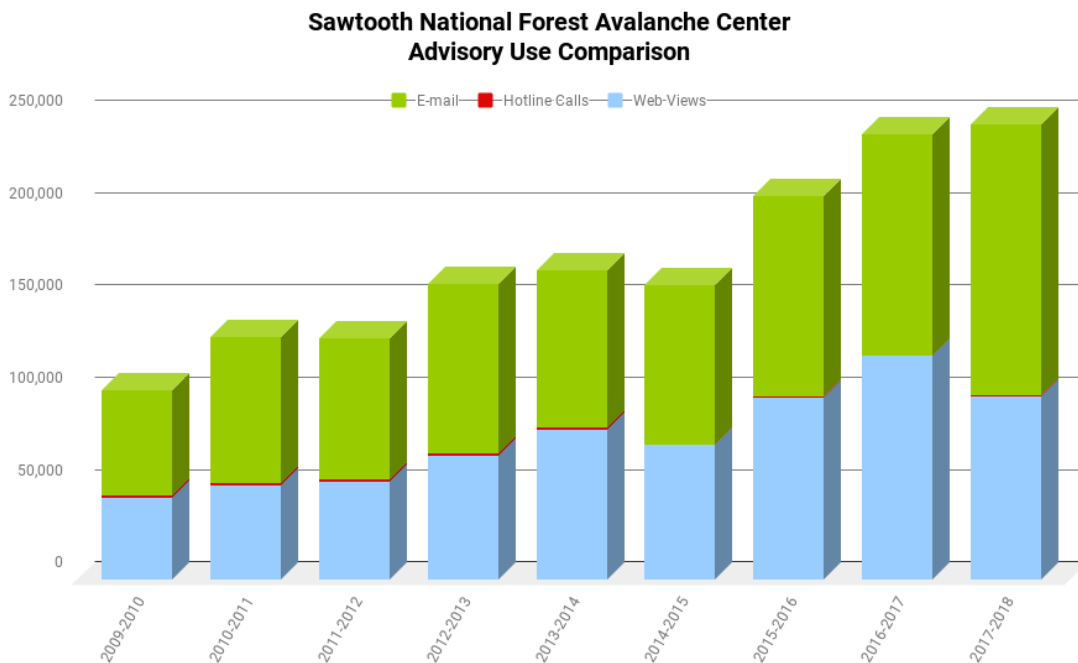


The danger rose (top) and the new mountain elevation danger product (bottom).

The Sawtooth Avalanche Center is one of the last US avalanche centers to stop using the danger rose. The danger rose served its purpose as a valuable graphical tool for many years, but eliminating it improves messaging consistency on operational, regional, and national scales.

Website and Advisory Use

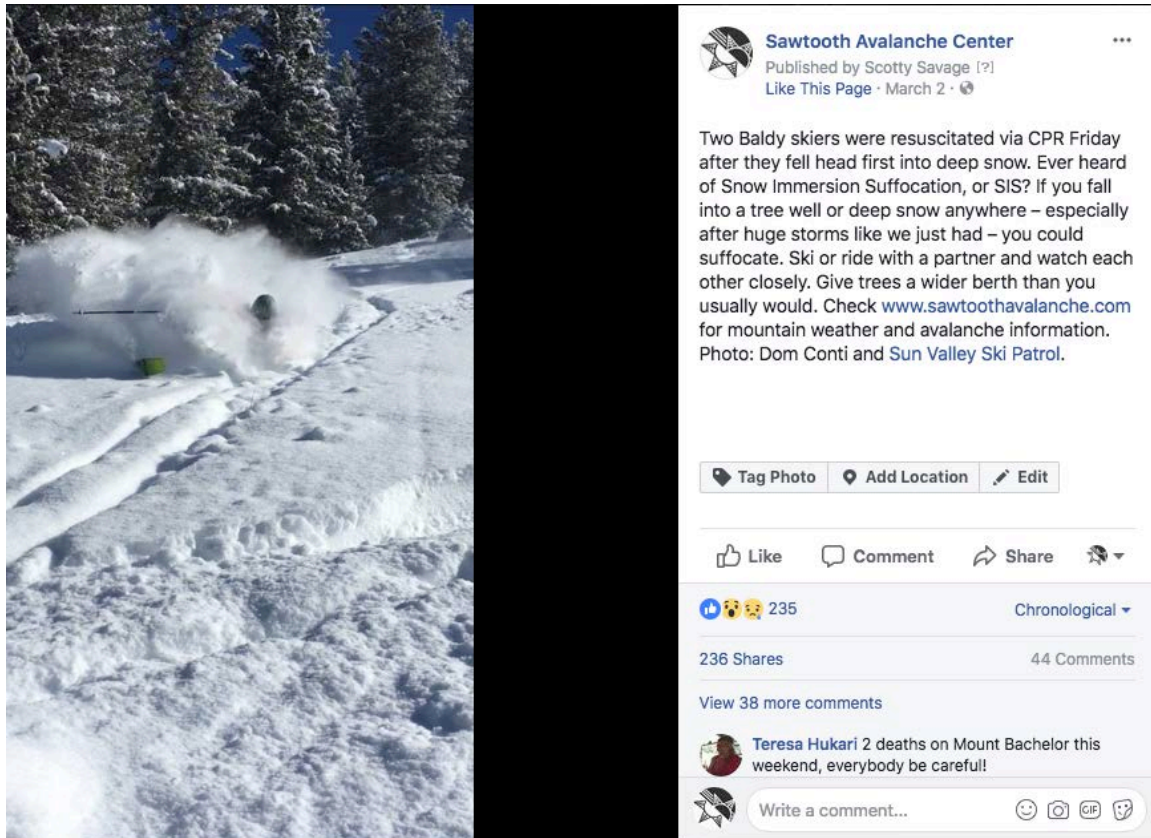
We issued our first General Snow and Avalanche Information update on November 15th and began Daily Avalanche Advisories early on November 30th, issuing 138 advisories this season (compared to 129 last season, and 132 two seasons ago). Our email list grew yet again to top 1,000 subscribers compared to 850 last year. All advisories were recorded for access on our webpage (audio files) as well as our advisory hotline. Our hotline bounced back to receive 437 calls after malfunctioning for a portion of last season.



Social Media & Outreach

Social media plays a crucial role in communicating avalanche conditions and social event information:

- We now have 3,224 followers on Facebook (up 13% from last year) and our “Total Reach” remained solid at nearly 320,000 for the season. We now reach as many people via Facebook as we do via website visits and emails combined.
- Based on public feedback, we began posting the danger rating to our Facebook page along with basic snow, avalanche and weather updates.



This Facebook post during a large storm in early March was shared 236 times.

- YouTube continues to be a successful educational tool; this season we posted 13 videos that were viewed 7,066 times.
- Videos on our YouTube channel have been viewed over 85,000 times since 2007.
- We now have 489 followers on Twitter, reaching a wider audience of businesses, government organizations, towns, and news agencies.
- Our Instagram account continues to grow. We currently have 1,122 followers, nearly doubling last years' 588 followers.
- We plan to continue to tweak our Social Media Plan based on industry best practices to guide post frequency, channel focus, and content.



Baker Lake Snowmobile Triggered Avalanche

576 views

0 likes 0 comments SHARE



Examples of Instagram (left), YouTube (upper right) and Twitter (bottom right) posts.

Thanks to the generous support of Ketchum radio station KDPI and local surgeon Dr. Glen Shapiro, KECH and KDPI Radio once again provided daily 60-second spots during the morning commute hour and broadcast conditions updates during periods of heightened avalanche danger. This year we issued 97 weekday morning avalanche forecasts that were broadcast 194 times via our radio partners.



Operations



Updated sleds for 2017-2018

We hit the ground running with all 4 staff members returning. We maintained and improved weather stations, prepared education materials, installed the beacon park, updated our daily email client, troubleshooted the new advisory format and issued eight General Snow and Avalanche Updates prior to our first Daily Avalanche Advisory on November 30th.

Snowmobiles are vital to SAC operations. Updates to our aging sleds were made possible by a grant from Idaho Parks and Recreation and the generous support of the Friends of the Avalanche Center.

We logged 165 days in the field; 75% of the time was spent on skis, 19% on snowmobiles, and 15% either hiking or with binoculars on the highway. We received 620 total observations; approximately 12% of these were from motorized users. Local ski guides and snow safety workers contributed 310 observations to our professional observations database. We owe a huge thank you to the guides at Sawtooth Mountain Guides, Sun Valley Heli Ski, and Sun Valley Trekking, and the ski patrols at Sun Valley – Bald Mountain and Soldier Mountain.

Educational Programs



By adding blue dye to the snow surface, students can watch water moving through the snowpack.

Year in and year out, Sawtooth Avalanche Center forecasters have shouldered an ever increasing volume of public speaking and avalanche education requests from the general public, local businesses, ski patrol, schools and regional and national snow and avalanche conferences. In the last 5 seasons, these events have reached an average of 1,540 people. Unfortunately, many education requests get stacked in the first two months of the forecasting season, and our small crew cannot find time to get

to every event. Seeing an opportunity to help, the Friends of the Sawtooth Avalanche Center, through a generous donation by Beverly and Michael DeChevrieux, hired Stacey Ward as Education Coordinator. This new position oversees a pool of local

avalanche professionals that can be called upon to make sure that we never have to say 'no' to an education request. Additionally, the Friends set an ambitious future goal to make sure every middle school aged student in the Wood River Valley receives avalanche education before heading to high school.



Discussing why slope angle is important to avalanches.

While the Friends wing of the education program covers basic Avalanche Awareness and Beacon Use and Rescue, SAC staff will continue to offer specialty talks, professional training, and an annual Motorized Level 1 course. This season the education program delivered 49 presentations to reach over 1,700 people. We held two Introduction to Avalanches classes in December and January; 80 people attended the classroom sessions and 31 attended the field sessions. We visited local K-12 students in the classroom on 10 occasions, focusing on avalanche awareness and companion rescue.

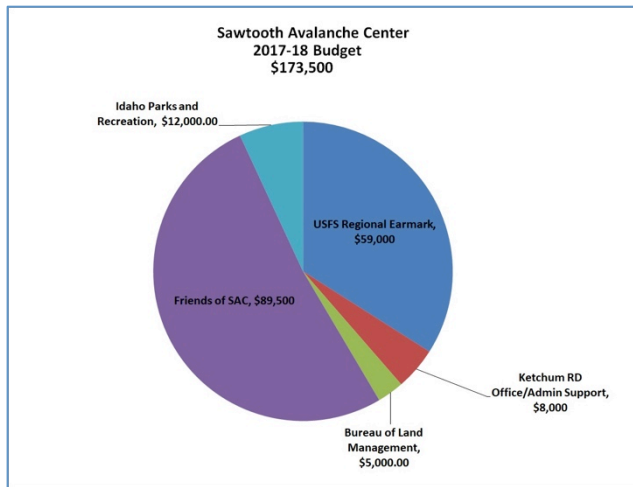
On the professional side of things, Scott presented at the National Avalanche School, Northern Rockies Snow Avalanche Workshop and Sierra Avalanche Center Professional Development Seminar. He also presented to Sun Valley Heli Ski and Idaho Power crews. Ethan added talks at the annual Winter Rescue Meeting and the Local Emergency Planning Committee (LEPC). SAC staff also taught courses to forest service staff in the Minidoka, Lowman, and Ketchum ranger districts. Scott guest lectured during an avalanche Pro 2 course, and we continued to spearhead a Motorized Level 1 avalanche course that's reached 53 riders over the last 4 seasons.

SAC staff hosted the annual Professional Development Seminar on April 9th; the evening session upstairs at Whiskey Jacques was well attended by approximately 35 local and regional avalanche professionals. Our keynote speakers included: Kevin Hammonds (Assistant Professor in the Department of Civil Engineering at Montana State University), Micah Johnson (Chief Technology Officer at Adventure Data), Andrea Mannberg (Associate Professor, School of Business and Economics, UiT – The Arctic University of Norway), Margaret Wheeler (AMGA/IFMGA Mountain Guide) and our very own Ben VandenBos.

Funding & Partnerships

The SAC relies on a variety of partnerships for funding. Approximately half of the Center's budget comes from the Forest Service. Despite shrinking federal budgets, the USFS Region 4 and Sawtooth NF increased our funding level this year; this support shows their continuing commitment to public safety. The Ketchum Ranger District provides office and administrative support and maintenance facilities. The Bureau of Land Management also contributes \$5000 annually.

The Sawtooth Avalanche Center is an example of a successful public-private partnership.



The Friends of the Sawtooth Avalanche Center (501c3) are the critical private partner in our mission; the center would not exist without their efforts and support. The Friends' contribution covers salaries for 2 of our 3 forecasting positions and our intern forecaster. In addition, they provide funds for safety equipment, field equipment, website updates, educational supplies, forecaster training, etc.

Over half of our "cash" budget this season came from the Friends.

The Friends of the Sawtooth Avalanche Center raise funds through sponsorship, private donations, grants and fundraising events. The Friends success is indicative of strong community buy-in and support of the Avalanche Center mission.

Snowpack Summary

If I were to stop and ask a random passerby in Hailey to describe the winter, they'd undoubtedly use words like "dry" and "warm". So it may come as a surprise that mountainous locations around the Wood River Valley and on up to Stanley are reporting a snowpack of 85-110% of average. Last year's record breaking snowfall was consistent and relentless. By contrast, this season was punctuated with long droughts and powerful, warm, moisture laden storms – many of which shot snow levels to 9,000'.



Sun Valley Heli Ski took this photo of widespread avalanche activity in the Smoky Mountains. This and "countless" other slides were in large part due to our "12/19" weak layer buried after a 2-week drought.

A few brave souls took their first turns of the year before Halloween, and there was enough snow cover in the Smoky and Boulder Zone to begin Daily Avalanche Advisories by November 30th. I'd like to think that we didn't jinx it, but after issuing our first advisory we entered a long high-pressure induced drought – Galena Summit recorded just 3" of snow from December 4th through December 18th. When moisture returned to bury the weak, sugary snow that'd formed at the snow surface, our "12/19" weak layer was born. This layer was put to the test as a powerful storm dropped up to 15" of snow (1.5" SWE) in less than 24 hrs to prompt the SAC's first Avalanche Warning of the season on January 12th (photo above).

At the tailend of another long drought in early February, snow totals were hovering around 85% of normal from Galena Summit and north and a dismal 25-60% in the Pioneers, Wood River Valley and Soldier Mountains. In fact, the Wood River Valley Zone would not receive enough snow to issue advisories until March 2nd. Just as those eager for spring started to tune up the mountain bikes and dust off the boats, a

series of warm, wet storms brought heavy snow, rain and avalanches that would keep us on our toes right through the last advisory on April 15th.

Galena Summit – First of the Month Snow Data (Snow Depth/SWE)				
	Jan 1 st	Feb 1 st	Mar 1 st	Apr 1 st
2017	41"/9.8	61"/16.5"	95"/28.4"	90"/33"
2018	32"/8.7"	45"/12"	54"/14.5"	71"/21.2"

Snow depths in the last two seasons at Galena Summit -notice the big jump in snow depth this past March.

A 2-day storm March 22nd and 23rd unloaded 2-2.5" of snow water equivalent and set off another impressive avalanche cycle that included large wind slabs and persistent slabs in the alpine as well as multiple wet slab avalanches in the Pioneers and mountains surrounding the Wood River Valley. Wet avalanches remained a concern through the end of the season as a mild, wet spring sent multiple waves of melt water into the snowpack (photos below).



Left: This wet slab avalanche cleared hundreds of mature trees from a burned area in the Warm Springs Drainage. Right: ITD road crews triggered this deep, wet slab avalanche near Galena Summit.

Next Season's Goals

- Continue to improve web-based products to deliver quality information in an easily understandable format.
- Hire and train a new seasonal Forecaster.
- Present findings from a study of mixed rain-snow events causing wet snow avalanching at the International Snow Science Workshop.



Slab avalanche that occurred during the March 22-23rd avalanche cycle in the Prairie Creek drainage of the Smoky Mountains.

- Work with the Friends of the SAC to increase local avalanche awareness offerings, especially to K-12 students.
- Work with other avalanche centers to evaluate and improve our web-based information platforms.
- Secure funding for and begin planning for the next significant website upgrade.
- Continue to make inroads with, and increase outreach to, the motorized community, which makes up *12 of Idaho's last 13 avalanche fatalities*.
- Work with Idaho Falls and other Snake River plain community members to create an avalanche and weather information-sharing platform for eastern Idaho recreationists.
- Increase the quantity and quality of observations we receive from the public by encouraging use of our improved Observations platform and database.
- Continue instructing Motorized Level 1 courses and working on our riding skills!