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FOREST SERVICE SUN VALLEY AVALANCHE CENTER 2000-2001 Annual Report



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INTRODUCTION

The Forest Service Sun Valley Avalanche Center (SVAC) is a unique affiliation of federal agencies, local organizations and businesses, members of the outdoor industry, and individuals. Through the cooperative efforts of all these groups and individuals the Avalanche Center is a successful community project. Our goal is two fold: One, to provide avalanche and mountain weather advisories to the public and two, to provide and promote avalanche awareness and education. The SVAC is proud to be a part of a community partnership that benefits winter recreationists, Idaho travelers, local youth and winter visitors.

**WINTER 2001-2002, as part of the national network of Forest Service
Avalanche Centers We will be changing our name to:**

**THE SAWTOOTH
NATIONAL
FOREST
AVALANCHE
CENTER**

ACKNOWLEDGEMENTS

The Forest Service Sun Valley Avalanche Center (SVAC) is deeply indebted to the many who have helped support us this season. We'd like to thank all of the agencies, businesses and individuals that provided logistical support, financial support and observations to the avalanche center this past winter. Without your help, we wouldn't be able to provide this service.

The **Forest Service National Avalanche Center (NAC)** provided funds, leadership, and organizational direction. The NAC annually sponsors a pre-season discussion between Western Forecast Centers. This provides a helpful exchange of ideas, which allows for greater collaboration and communication between the individual centers.

The **National Weather Service** issued a daily "Sawtooth Avalanche Guidance Forecast" for 6,000 and 10,000 ft. elevations in the Sun Valley/Sawtooth Valley area and provided accurate target information for our forecast area. Rick Winther and Sharon Alden coordinated the program out of the Pocatello Weather Service office.

The **National Resource Conservation Service** contributed by allowing us access to their data from remote Snotel sites, and compiling monthly totals. This data has been an important component for formulating our backcountry forecasts.

Sun Valley Heli-Ski helps to maintain a weather station on Galena Summit in partnership with the Forest Service. They also provide extensive daily observations and snow study data, backcountry access when possible, and serve as a backup for computer operations at the SVAC.

Sun Valley Company provides daily support by maintaining a weather station at the top of Bald Mountain Ski Area and allowing data access. They also graciously assisted with the annual Snow Ball.

The **Avalanche Awareness Committee** provides invaluable enthusiasm and fundraising to promote the SVAC. **Martha** again donated her time and talent to update the SVAC brochure and to design the Snowball flyer. **Melissa Elkins** from the ERC and **Louise Stumph** and **Michael Malko** put in many hours assisting with the mail campaign and the annual Snow Ball.

Backwoods Mtn Sports and Sun Summit sold (at no profit to them) our Sun Valley Avalanche Center T-shirts to help raise money and spread awareness.

Continuing development of **The Youth Education Program** was made possible by some assistance and donations.

The **Environmental Resource Center** provides the non-profit umbrella for the Avalanche Awareness Committee and the Friends of the Sun Valley Avalanche Center, which is a project of the ERC. The ERC provides assistance in the way of tax-exempt status, bulk mailing privileges and office support. This will shift next year to the American Avalanche Association. Both groups deserve many thanks.

The National Avalanche Center's **Westwide Avalanche Network** (avalanche.org) provides a constant connection with the rest of the avalanche forecast community, provides internet posting of our daily advisory and hosted our website for the 2000-2001 season. **Cyberspace Snow and Avalanche Center** (csac.org) provides a daily e-mail service and internet posting of our avalanche advisory.

Dan Judd assisted us through out the season with computer programming and data organization. **Jay Gress** re-designed and installed changes to our website, and assists with internet computer projects.

Volunteer Observers, from a variety of backgrounds and interests, contributed data that assisted us in our daily advisories. Training and expertise varied considerably, and all of the information reinforced our premise that every observation helps to formulate the daily advisory.

Blaine County Rec District hosted the December Avalanche Class and raffled off a North Valley Trails season pass as a Friends contribution.

Patagonia helped to provide top of the line outdoor clothing that kept the forecasters warm and dry throughout the winter.

Power Engineers, provided a \$1,000 grant thanks to the efforts of **Steve Deal**

THE SUN VALLEY AVALANCHE CENTER

HISTORY

The Ketchum Ranger District of the Sawtooth National Forest has provided a recorded phone message since 1983, that gives callers daily avalanche and weather conditions. Butch Harper, district snow ranger from 1963 to 1994, implemented and directed this small program with help from Rick Barker, Sun Valley Heli-ski, the National Weather Service and the Soil conservation Service. Butch also taught avalanche awareness classes in the Sun Valley Area. His programs were among the first in the country to reach out to the winter recreational user on national forest land.

Butch retired in 1994 and Doug Abromeit, Director of the National Avalanche Center and former Snow Ranger from Alta, Utah, took the job as the winter recreation specialist for the Ketchum Ranger District. In 1995-96 the Forest Service program expanded to provide a more thorough avalanche advisory and mountain weather forecast based on improved weather instrumentation in remote sites and increased field observations. The program evolved into what is now the Forest service Sun Valley Avalanche Center, which Doug directs.

SVAC now offers several basic avalanche awareness classroom and field sessions throughout the winter in the Wood River Valley and outlying areas. We provide a daily avalanche advisory and mountain weather forecast based on data collected by forecasters, Sun Valley Heli-ski and volunteers. Sun Valley Heli-ski continues to provide an invaluable community partnership by sharing the expense and maintenance of our remote weather site and providing professional observations. Sun Valley Company maintains a weather station on Bald Mountain and allows us to access their data.

Winter recreation is on the rise and we continue to expand our educational programs to include snowshoers, snowmobilers and school children. We are grateful for the community support and all of our partnership affiliates that allow us to operate on a level that matches or exceeds the quality of leading avalanche centers in the country.

FORECAST AREA

The SVAC forecast area includes the Wood River Valley drainages from the town of Bellevue at the south end of the valley to the headwaters of the Salmon River at the north end of the valley. The geography changes dramatically along this corridor from high sagebrush desert at 5,000ft at the southern end, to mountainous terrain with peaks over 12,000 ft. This creates a varied snowpack. The forecast area is broken down into three major zones in order to identify these geographic/snowpack differences and communicate them to the public.

- 1) **North Valley-** ranging from Galena Summit and the headwaters of the Salmon River to the North Fork of the Big Wood River.
- 2) **Central Valley-** from North Fork to East Fork of the Big Wood River and Greenhorn Gulch
- 3) **South Valley-** from Greenhorn and East Fork south to Bellevue.

At times, the hazard evaluation may be similar for all zones, other times it can be distinctly different. We also offer information for the Stanley/ Sawtooth area and the Soldier Mtn/Fairfield area when possible.

AN OVERVIEW OF THE 2000-2001 SEASON

Central Idaho experienced a lean winter. Snow averages hovered near 50% throughout the season. Consequently, the snowpack remained weak and unsupportive in many places. Several relatively small snow storms in December and January prompted some avalanche cycles on the depth hoar. In February, snow and wind events appeared to be steering things toward a larger avalanche cycle, but we never received quite enough load and only had isolated avalanches and incidents. A warming event in early March produced moderate slide activity and promoted better stability within the snowpack. However, spring and summer snowpacks will be questionable with any isothermal conditions due to such extensively developed depth hoar. Throughout the winter, some close calls were reported but no full burials or serious accidents. In general, the people that were out riding or skiing seemed to pick good lines and showed a respect for the lingering instabilities.

In spite of such a dry winter, the Sun Valley Avalanche Center (SVAC) had what we consider a very successful season. The Center is becoming well known throughout the region. We taught 25 different classes to a variety of groups and in a number of outlying communities. Our education program expanded this year thanks to the national level funding Doug and Karl were able to obtain for all of the centers. In fact, we were so busy with classes we were unable to meet the demand. A sure sign of increased awareness, when attendance numbers go up and people ask for classes during a dry snow year. Students varied from elementary and middle school groups to boarders, skiers, snowmachiners, Search and Rescue, Idaho Power, National Weather Service Forecasters, and the Tri-State Snowmachine Groomers Association. We even taught a very successful field session on snowmachines, specifically for riders. Student numbers totaled over 900, which is an enormous increase for our Center (only a few hundred taught last year). Several Idaho media programs and Discovery profiled the Sun Valley Avalanche Center and included basic education and awareness tips.

Advisory hits (nearly 18,000 combined for the Westwide and CSAC advisory sites and over 9,600 for our homepage) and hotline calls (6,900) were higher than last season. We are pleased with these numbers as we had unusually dry conditions throughout the winter, as well as a late start and early finish. We continue to see a shift in numbers from phone use to internet access, but do retain a significant phone audience. A newly designed web page and a new advisory page, (thanks to Jay Gress), brought many comments of approval. The SVAC structured the advisories so that from Thanksgiving until mid-December, we offered general snow and weather information that was updated each weekend and mid week when needed. The last two weeks of March we scaled back from the daily advisory format to Monday postings of general information and 5-day weather. Friday, Saturday and Sunday mornings we offered a regular daily avalanche advisory. In this manner we met the needs of the public and were able to save money during a dry year. One of our best advisories, was when Anne Marie predicted a considerable chance of Pat and Margaret Deal welcoming Zachary Sean Deal into the world on February 23rd, and she was right!

The local radio station would broadcast how to reach the avalanche hotline and website daily, and promoted the services such as the hotline and upcoming classes that the avalanche center offered. When avalanche conditions were notable, they would put this on the radio at prime time in the mornings. The local TV station did a daily weather report and would include the avalanche advisory. Faxes and e-mails were sent to area ski, snowmobile shops and Idaho Power linemen. The Avalanche Center wrote a weekly column for the local newspaper called "Snow Savvy". It gave snow and avalanche tips about recognizing clues of instability or stability, how to practice safe travel and rescue. Jessica Wasilewski, our January Intern, assisted with classes, field work, and even wrote an article for Snow Savvy and produced the "Friends" Newsletter.

Of interest, is the shift of the "Friends of the Sun Valley Avalanche Center" from the umbrella of the local non-profit Environmental Resource Center (ERC), to become one of several Friends organizations under the American Avalanche Association umbrella. A positive move that everyone is happy with. The intent of the ERC was to help launch the Friends group and for them to move on in a few years.

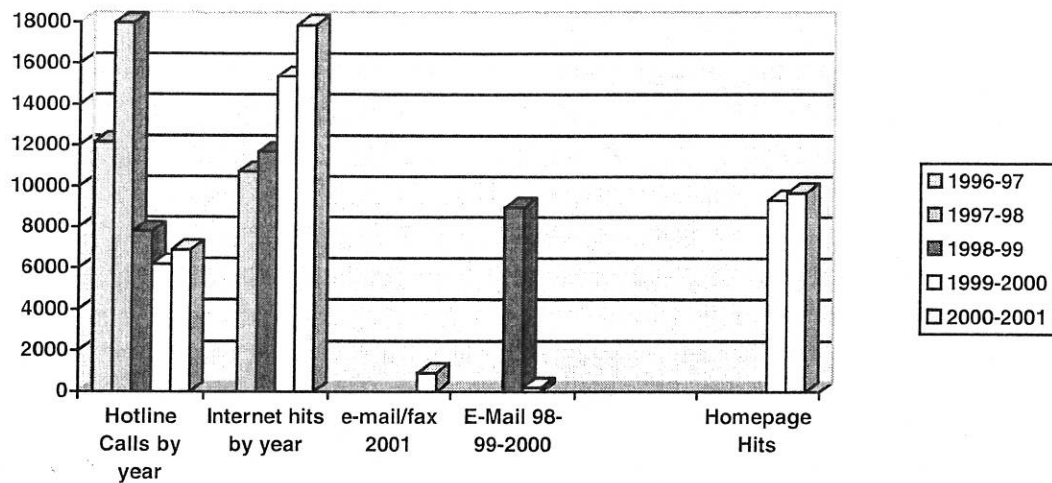
OPERATIONS 2000-2001

Hotline and Internet:

The Sun Valley Avalanche Center began putting out general avalanche information in early November due to a 30 inch snowstorm that fell in late October. As it turns out, the conditions following this storm were some of the best of the year, but there were not many people who had the foresight to get out and enjoy it that early! Meager storms were all that followed throughout the season, and this left us with a thin, weak and incredibly variable snowpack. However, despite the lack of storms, snowpack stability was very tricky to evaluate, and this made the avalanche center service even more valuable.

We began putting out daily advisories in mid-December, and finished the season early, at the beginning of April, due to the rapid onset of spring. Despite the unusually dry conditions this winter and our shorter season, the numbers of callers to our hotline, (6,900) were up this year. The internet (18,000 hits) continues to be a popular way for people to get the advisory, and thanks to Jay Gress, a Friends of SVAC board member, we had a great updated web page this year with links to weather, SNOTEL and education sites. The home page received over 9,600 hits.

New this year is the Forest Service National Avalanche Center website, available through www.avalanche.org. This site has a great "Day in the Backcountry" tutorial with everything from what gear to pack to how to perform stability tests. It also includes an interactive backcountry tour, which makes backcountry travelers choose what course of action to take in a tough situation. Many other centers put links to this page off of their home pages.



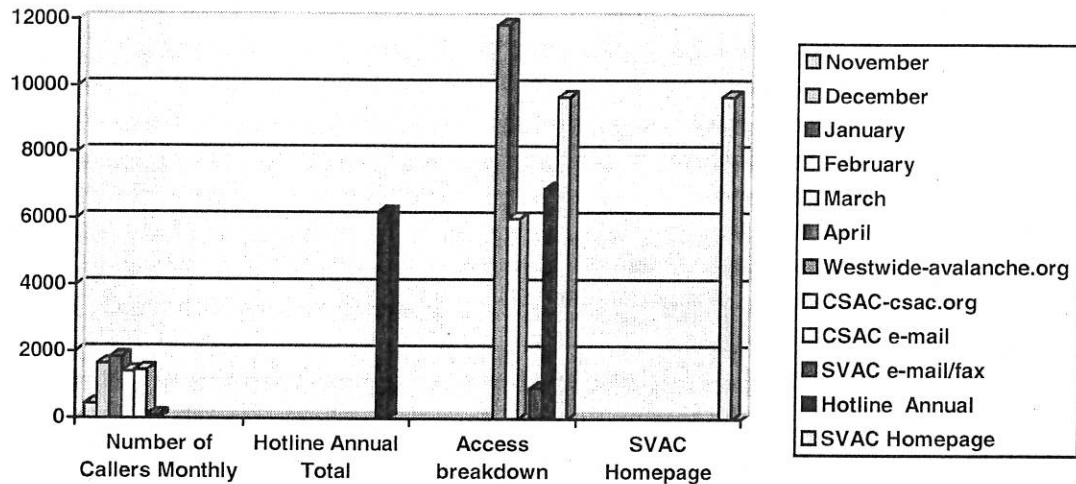
AVALANCHE ADVISORY USE PATTERNS since 1996

YEAR	Hotline	Observer Line	Westwide	CSAC	CSAC e-mail	SVAC e-mail/fax
1996-97	12,167	unavailable.....				
1997-98	7,271	857	8,700	2,000	unavailable	
1998-99	7,780	791	7,800	3,864	8,955	
1999-2000	6,193	unavailable	9,353	6,000	270 (fee charged)	
2000-2001	6,900	unavailable	11,851	6,000		920

Annual Number of Bulletin Accesses (EXCLUDING OBSERVER LINE)

2000-2001	25,671 (plus 9,684 home page hits)
1999-2000	21,816 (plus 9,319 Homepage hits)
1998-99	28,399
1997-98	17,971
1996-97	12,167 (only hotline due to website numbers unknown)





NUMBER OF CALLS BY MONTH

	Hot Line	Internet Sites
NOVEMBER:	435	(monthly data not available)
DECEMBER:	1,650	
JANUARY:	1,844	
FEBRUARY:	1,449	
MARCH:	1,410	
APRIL:	112	

Year	Hotline	Westwide	CSAC	CSAC e-mail	SVAC e-mail/fax	Homepage
2000-2001	6,900	11,851	6,000	unavailable	920	9,684

Annual Number of Bulletin Accesses (EXCLUDING OBSERVER LINE)

2000-2001: 25,671 (plus 9684 homepage hits)
 1999-2000: 21,816 (plus 9,319 homepage hits)
 1998-99: 28,399
 1997-98: 17,971

Sun Valley Avalanche Center
Avalanche Advisory User Numbers
2000-2001

This past season, in spite of a late start an early finish and a limited number of storms, we saw an increase in all user numbers. This mirrors the increased awareness in our area.

Accidents

In North America this winter there were 40**** avalanche fatalities, with an additional 60 people reported being caught. The good news this winter, is what seems to be the increasing number of reports of full burials where the person was recovered alive by their own party. This means that avalanche education is working in some ways; people are starting to carry the necessary equipment, and are able to use it effectively. The troubling aspect is that people are making the same mistakes that lead to serious accidents. If you look at most accidents, simple safe travel methods such as one at a time on a slope and communicating and watching each other could drastically reduce the number of deaths or burials.

Because our snowpack was so weak this year, we emphasized safe travel techniques continuously on the advisory. We had no accidents in our forecast area, there were several near misses, but fortunately no one was buried or injured. Based on observations of where people were playing this winter, it seemed people were notching it back a little in light of the weak snowpack situation. Mother Nature handed out plenty of instability warnings with continuous collapsing and cracking throughout the winter, and this may well have contributed to the lack of accidents this winter in our area. Hopefully, awareness and education have helped people make good decisions in the backcountry, particularly in a year with such an unpredictable snowpack.

Just after the Avalanche Center issued their last general springtime advisory, a solo skier triggered a large slide in the northwest bowl of Galena Peak. He was engulfed in the debris and carried 600 vertical feet, coming to rest on top of 10-15 foot deep debris piles with only a sprained thumb. The slide was classified as SS-3+-AS-O/G, 250 yards long crown face and 2-4 feet deep. It appeared to be triggered from a shallow depth hoar spot in the snowpack and the slope had been recently loaded by a 12" snowstorm.

Education

Demand for avalanche education has continued to increase, and the center has responded by increasing our numbers of classes and expanding our outreach to different audiences. We had a very busy class schedule this year, and fortunately last winter, we were able to hire Pat Deal as another part-time forecaster to help share the class load. We taught 25 different classes to a variety of groups. Groups we taught included elementary and middle school students, skiers, boarders and snowmachiners, search and rescue groups, Idaho Power lineman, National Weather Service forecasters, the Tri-State Groomers Association, and Elder Hostel. We traveled to the communities of Challis, Stanley and Fairfield to offer classes that were all well attended. Student numbers totaled over 900, which is an enormous increase for our center (only a few hundred last year). This increase is due in large part of the increase in funding Doug and Karl obtained for all of the centers. We were able to advertise our classes more effectively, and in general get the word out better.

Backwoods Mountain Sports again held beacon clinics every Thursday afternoon, and although the number of people attending was not staggering, we really appreciate this service. It also helps us stay up to date with innovations in beacons.

The avalanche center staff continued their personal education by attending the International Snow Science Workshop, a symposium held every two years with avalanche professionals from around the world. We also had two visits from National Weather Service forecasters, who helped us improve our understanding of weather maps and trends. Anne Marie and Janet were able to participate as instructors for the Alaska Mountain Safety Center and for the NOLS Instructors program in Driggs. We strongly believe that the opportunity to teach with other programs offers an excellent exchange of ideas and teaching techniques.

Youth Education Programs

The 2000-2001 season saw some advancement for youth programs. The biggest effort focused on getting an annual assembly that would be an avalanche awareness class for the Middle School age youth. Specifically, the 7th grade. This has been a real challenge since there is already a very tight schedule and curriculum based needs. The Avalanche Center exchanged numerous phone calls and conversations this winter along these lines, without success. We haven't given up, and we plan on renewing efforts this summer to obtain a time slot. We feel that this is the best age group to target for avalanche education. The Gallatin National Forest Avalanche Center based in Bozeman, MT has been able to get approval in the Montana school system and we feel that this will help us to gain acceptance in Idaho.

Along other venues, the Avalanche Center was able to teach a 2 hour program including an hour outside with the Stanley school- 43 children grades 1-8, and a number of their parents attended. This class had a lot of fun exercises and props to keep all ages engaged. We were able to do a classroom session and an entire field day with the Sun Valley Ski Education Foundation Snowboard team 15 students. Our regular evening awareness classes have had 5 to 10, local middle school to high school age youth attending each session as well. For our Challis class, the local high school teacher gave students extra credit if they attended our January evening class and we had 5 or 6 attendees from the high school.

The National Avalanche Center Web site has been an excellent instructional tool for middle school and high school students. We have been able to steer many students towards this site and have gotten great reviews from teachers and students alike. The site offers basic avalanche info in the form of a "slide guide" for skiers & boarders and a separate slide guide that addresses the specific concerns of snowmachiners. The site also offers an interactive backcountry tour where you can click your way along a day in the backcountry while making avalanche safety related decisions. It is difficult to track use since the counter crashed mid-season, but the total hits are well into the thousands since the site's inception this winter.

In the works is a National Avalanche Center video that focuses on the Free Riding, Extreme skiing and boarding groups. It provides exciting footage and behind the scene looks at the avalanche safety practices of all these groups. This video helps to promote the fact that it is "hip" to think and practice avalanche safety. Excellent avalanche information and skills are demonstrated throughout the video. This should be available by next season and will be sure to appeal to the skiing and boarding youth.

Staff

Doug Abromeit, director of the National Avalanche Center and Winter Recreation specialist for the Ketchum Ranger District continued to oversee operations of the Sun Valley Avalanche Center, as well as fundraising for all of the centers. Lead forecaster Janet Kellam finished her fifth season for the center and her tireless efforts towards improving the center really paid off. Anne Marie Devereaux finished her third season with the center, and saw snowpack conditions that she has never seen before, which were very educational. Pat Deal came on as regular part-time and did a great job, particularly with the snowmachine audience, and really got out into the snowmachiners backcountry. David Gordon continued assisting us with one forecast a week and with classes. David's insightful forecasts and dedicated field observations are a great asset to the center.

Observer Network

This was a difficult year to get observers excited about the snowpack. People were not getting out like they would be in a typical winter, and Sun Valley Heli-ski did not operate at all, which left a big gap in our daily observations. However, the dedicated folks that get out into the backcountry no matter what, were very good about either calling our observer voicemail, or calling one of us with what they were seeing. We were also in a perpetual state of "what will happen if we get a load on this snowpack" and the load never came, so there was not a lot of slide activity to report except for some smaller avalanche cycles.

We sent out an observer's letter early in the season to nudge people a little to call in observations, but since people were just plain blasé about the winter in general, we did not get a lot of response. We will keep trying!

Media

Throughout the west, dry conditions led to very weak snowpack conditions, which in turn led to avalanche accidents. The media is always quick to cover accidents, and in spite of some dramatization, the news helps spread awareness about avalanches.

There were numerous articles in newspapers and magazines throughout Idaho on avalanches, as well as 2 different in depth news stories by ABC and NBC Boise TV stations. In addition, the Discovery channel profiled the Sun Valley Avalanche center as part of a film that will be broadcast next winter.

Locally, we continued to write our weekly column "Snow Savvy" (see appendix) in the Wood River Journal. The local radio station broadcasted daily how to reach the avalanche hotline and website, and when conditions were notable, they would air this during prime time in the morning. The local TV station did a daily weather report and included the avalanche advisory. (We learned quickly that we needed to educate the media personnel so that information would be disseminated accurately, not paraphrased, and continue to work at this.) Faxes and e-mails were sent to local ski and snowmobile shops and to Idaho power. Finally, our January intern Jessica Waszilewski did a great "Friends" newsletter that was sent out to everyone on our mailing list.

Fundraising

The Friends of the Sun Valley Avalanche Center was started as a project of the Environmental Resource Center, and it is one of their goals to help launch non-profits until they can stand on their own. We are sincerely grateful to the ERC for their support, but it is time for us to move on. We will be moving our organization to the American Avalanche Association, (AAA) which will be acting as the umbrella organization for several of the avalanche centers "friends groups" in the west. This is a great place for us to be permanently, and the percentage of our funds that they take will be put back into the avalanche community, so it is a win-win situation.

Committee members of the "Friends of the SVAC" are:

Louise Stumph, Michael Malko, Sara Berquist, Rob King, Steve Wolper, Nils Ribi, Mark and Martha Deffe, Michael Kraynick, Jay Gress, Dennis Davis, and Nancy Monk. Thanks to you all!

Our fundraising events were very successful this year and included:

The Avalanche Center Snowball- Our favorite and local legendary band, The Sensational Toastpoints, again graced our snowball with their great music. The Sun Valley Co. discounted the price of River Run Lodge, a great venue for this event, and also discounted the price of a seasons pass for our raffle. Michael Malko spent a great deal of time gathering up awesome donated prizes and locals donated as well, so our raffle was a great success.

Fundraising Mailing- Our mailing again combined donor envelopes with raffle tickets for the snowball, and this has proved to be very successful to get people to donate-the chance to win something seems to encourage donations. Louise Stumph was again extremely helpful with our fundraising, and we are very appreciative of her efforts.

Hotline Sponsorship- Most of the businesses that have previously sponsored the hotline were again signed up to donate generously when we were informed that we could not accept donations in exchange for a hotline "brought to you by" message. This was an unfortunate situation as these donations have really helped to cover the cost of the hotline in the past.

T-Shirt Sales- Backwoods Mountain Sports and Sun Summit retail shops have continued to allow us to sell our T-shirts. They were a popular Christmas gift this year and sales have been good. We may switch to hats for next year.

The total raised through all of these events was over \$8000. Again, we are very thankful for the support.

MONTHLY SUMMARIES 2000-20001

August 31st through September 4th mixed rain and snow. Most snow melted at upper elevations except pockets observed shaded, due north at upper elevations, especially Pioneer Mtns. Some upper elevation sites showed nearly 2" precipitation H₂O.

September 22nd - mixed rain and snow event, approximately 12" in the Pioneers, only a few inches in the northern Sawtooths. All melted by Oct 7th except for scattered upper elevation small, due north pockets or shady areas.

Oct 9-10- Significant precipitation. Rain low, snow above 7,000ft

This trend continued through the month of October; it was a very wet month. By the first week in November people were boarding and skiing in select places on Galena Summit. A consistent 24" total snow depth coverage on Baldy and top of Galena Summit. Supportable the weekend of November 11th, but cold temperatures beginning to deteriorate the pack. In most areas, a few inches of intermediate facets on the ground, a deteriorating melt/freeze and rain crust above that, then the upper layers consisting of newer snow, some wind drifted and some becoming sun affected. Some surface hoar formed in cooler locations.

NOVEMBER 2000

Clear and dry. Lower elevations have bare south slopes and shallow faceted snowpack on north facing or shady slopes. Mid to upper elevations south facing slopes vary, a MF crust on the ground at upper elevations, matrix of facets and crusts on top of this. Mid to upper elevation North West has ground MF 8-10 cm then mostly facets. All other Northerly aspects are facets. Some varied surface hoar

Month of November Precipitation Records:

	<u>November</u>	<u>Water Year</u>
Galena Summit: 1.4"H ₂ O,	34% of average November(4.10")	91% of avg as of Oct 1st
Big Wood Drainage	38% of average November	104% of avg as of Oct
Ist		
Salmon River Drainage	42% of average November	85% of avg as of Oct 1st

Note: KRD recorded .6"H₂O, 7" snow 5" total depth EOM

DECEMBER 2000

The month was very dry with warm and cold spells. Only significant storm was very light density snow, accompanied by strong winds that eventually hit all directions of the compass. Low elevations very little snow, month ending with bare South slopes at low to mid elevations. Subsequently we were facing a very uneven slab that was overlying extremely well developed facets. Considerable avalanche danger for a long time due to prolonged sensitivity of snowpack. Extensive collapsing, propagation cracks. Several close calls: Baker Creek & Vienna Mine area. They were all snowmobilers highmarking and triggering slides from below. Incidents occurred even 2 weeks after load-producing snowfall (storm #3) Most people were traveling and playing with very conservative lines.

Month of December Precipitation Records:

	<u>December</u>	<u>Water Year</u>
Galena Summit 2.0 "H2O,	45% of average December(4.4")	72% of avg as of Oct 1st
Big Wood Drainage	46% of average December	79% of avg as of Oct 1st
Salmon River Drainage	54% of average December	72% of avg as of Oct 1st

JANUARY 2001

January repeated the dry pattern. The Southern Wood River Valley received significantly more precipitation than the north end or than the Sawtooth Valley. Baldy showed an accumulation of 26 inches for the month, and Galena Summit received only 16 inches total. The first part of the month, the mid to lower elevations experienced a slide cycle of the newer snow on the depth hoar, although nothing was too big. The avalanche danger varied from Considerable to Moderate throughout the month. Any storms created small loads in pocket areas and we would see sporadic releases.

Month of January Precipitation Records:

		<u>Water Year</u>
Galena Summit 1.0"H2O,	23% of average January (4.3")	57% of avg as of Oct 1st
Big Wood Drainage	39% of average	67% of avg as of Oct 1st
Salmon River Drainage	28% of average	58% of avg as of Oct 1 st

FEBRUARY 2001

Yet another dry month. This time Galena Summit received slightly greater amounts than Baldy did. 23" vs 17". Still very meager and barely supportive conditions for fat skis and boards, or supportive for others only in select areas that had a slightly denser snowpack all winter. Difficult travel for snow machines off packed trails. Some strong wind events created loaded pockets but overall the pack was generally weak without quite enough of a load or slab development. Moderate Avalanche danger was the persistent advisory throughout the month.

Month of February Precipitation Records:

		<u>Water Year</u>
Galena Summit	1.3 "H2O 43% of average February(3.5")	57% of avg as of Oct 1st
Big Wood Drainage	35% of average	61% of avg as of Oct 1st
Salmon River Drainage	44 % of average	56% of avg as of Oct 1st

MARCH 2001

As for March, you guessed it. Once again we received minimal snow. Overall, the winter had been cooler than normal, thus the shallow pack constantly returned to faceted grains in most places in spite of the small snowfalls. Early in the month a series of strong winds and light snows finally loaded the snowpack in enough places that natural and triggered releases were reported from South to North Valley once the sun heated the slabs slightly. Shortly after this we finally experienced an isothermal warm up that produced a run of depth hoar slides in the mid to low elevation south valley areas, and upper elevation surface slides. By this point, most people had given up the idea of getting into the backcountry because it took too much planning to find the good conditions, even though there were some. A second isothermal warm up and rainstorm near the end of the month helped to promote spring conditions on the sunnier aspects at mid to upper elevations. Many areas the corn crust bridged weak, depth hoar that was beginning to MF but so large a grain that once the bridge failed you punched into air or mush. A lot of the low elevation terrain was already melted out by the end of the month.

Month of March Precipitation Records:

		<u>Water Year</u>
Galena Summit	1.4 "H2O, 47% of average March (3.0")	52% of avg as of Oct 1st
Big Wood Drainage	51% of average	60% of avg as of Oct 1st
Salmon River Drainage	66% of average	57% of avg as of Oct 1 st

APRIL 2001

The Avalanche Center thought it had issued its last advisory the weekend of April 1st. With only patches of snow on the ground in Ketchum and bare south slopes, backcountry interest was at an all time low. Interestingly enough, winter returned for a spell early in the month and brought good freezes and powder snow for those that were willing to hike a bit. It also brought an increased load to the snowpack. A lone skier triggered a large avalanche in the northwest bowl of Galena peak. He was engulfed in the debris and taken 600 vertical feet only to end up on top. The slide was classified as SS-3+-AS-O/G 2,500 foot crown, ran 1,200 vertical feet 2-4 foot deep crown face. Probably triggered from a shallow spot in the snowpack where a rocky outcropping was surrounded by facets.

Due to a number of storms and strong winds, we offered general information updates each Monday and Friday until April 15th. The latter half of April brought a two different slide cycles. One was an isothermal wet slide cycle where wet pocket slabs and point releases were visible at upper elevations on NE through NW aspects. This consisted of all of the accumulated snow on top of the depth hoar. Most slides were class 2 to smaller 3s. The other cycle was new snowfall and warming induced. Precipitation rates of up to 3 inches per hour were recorded and gusty winds. Numerous upper elevation slabs pulled out, some breaking through a couple layers of snow and some eventually digging into the ground layer of facets. North East to North West again were the aspects observed. Old snow surfaces could have been crusts and/or faceted snow layers. A couple skier released slide were reported including a skier taking a 300 foot ride into Titus Lake in one of the East facing gullies. Another was triggered from a distance, a S/SE facing slope above Williams yurt. Fairly good sized, it was a 1-2ft crown, wind slab on facets & crust, 100ft wide and ran 100ft.

Our closing bulletin with general spring and summer information was issued May 4th.

Month of April. Precipitation Records:

		<u>Water Year</u>
Galena Summit	3.1 "H2O, 148% of average April (2.1")	61% of avg as of Oct 1 st 14.1" vs 23.1" avg
Big Wood Drainage	144% of average	67% of avg as of Oct 1 st
Salmon River Drainage	152% of average	66% of avg as of Oct 1 st

BUDGET: 2000-2001

The Sun Valley Avalanche Center operates on a very modest budget. Operations would not be possible at such a professional level, if not for Friends of SVAC fundraising, for numerous hours of volunteer time donated by forecasters and observers, for the sharing of services provided by the Boise National Weather Service and the Natural Resource Conservation Agency, and untold hours of data collection and analysis from Sun Valley Heli-Ski Guides. Sun Valley Heli-Ski also shares a remote weather station and computer data link to this site with the Sun Valley Avalanche Center. Sun Valley Company shares their weather information site and access. The local Community School has generously opened their classrooms for us to teach evening Avalanche Awareness Classes throughout the winter. Blaine County Rec District sponsors our first local class of the season, which attracts a large audience. Again, the citizen's Avalanche Awareness Committee did a phenomenal job in reaching out to the community with a fundraising campaign that brought in over 18,000.00 dollars. (A note: The Forest Service Sun Valley Avalanche Center does not receive any funding from the user fee/trailhead parking pass-demo program.) Any budget surpluses will go towards the purchase of new equipment for maintaining the hotline phone system, weather instrumentation or computer needs.

Doug Abromeit and Karl Birkeland of the Forest Service National Avalanche Center have been working very hard to gain national recognition for all of the avalanche forecast centers. It appears, that some national level funding may continue in the year 2001-2002 to augment the local, regional and partnership funding that forms the budgets of the various avalanche centers.

Some Comparison Notes: The Snowball brought in approximately \$10,000.00 but expenses of promotion, printing and mailing, band, facility, seasons pass and beacon prizes left a net gain of approximately \$6,000.00. Donations again brought in approximately \$10,000.00. Because we knew we had some extra money in the bank, the Avalanche Center chose to take on as many classes as we could physically teach in the midst of our operating season. This allowed us to get a good estimate of what it would cost us to operate at this level on an annual basis. We can see that we need to generate more income.

Due to Forest Service regulations, we were unable to have a sponsorship program of the hotline or internet site this past season. We hope to change this for the 2001-2002 season and plan to offer sponsorship of both the hotline and our internet pages by complying with specific wording and regulations.

A focus for the 2001-2002 season will be to pursue more grants from foundations and local groups in order to finance our additional avalanche education programs.

CONTRIBUTIONS AND FUNDING from 2000-2001

Friends of the Sun Valley Avalanche Center Donations

mail campaign & events (Snowball & Raffle)	16,000.00	
classes	1,295.00	
T-shirts	1,126.00	
	subtotal	(18,421.00)

Region 4 USFS

USFS Winter Recreation Specialists, office and equipment use	19,000.00	
	subtotal	(37,421.00)
incl. Weather station, computer, local travel	5,000.00	

TOTAL **42,421.00****EXPENDITURES: 2000-2001**

Forecaster Salaries	36,500.00	
Travel	1,400.00	
Equipment & Supplies, incl snowmobile maintenance	1,600.00	
	subtotal	(39,500.00)
Computer software, programming, datalogger repair	180.00	
Printing incl. stickers, posters, photographic expenses	1,500.00	
Internet Fees	179.55	
Hotline Fees	1,500.00	
ERC Administration Fee (2000-2001)	684.24	
USFS Winter Recreation Specialists, office and equipment use		subtotal (43,543.79)
incl. Weather Station, computer and local travel	5,000.00	

TOTAL **48,543.79****Deficit <6,122.79>**

IN-KIND CONTRIBUTIONS OF EQUIPMENT AND LABOR:

The Sun Valley Avalanche Center relies not only on cash contributions, but the more than \$7,000 in donated equipment, services and labor from community members, businesses and agencies. It is unmistakable that the SVAC would not be able to operate at it's current level if not for these donations.

Boise National Weather Service: Services and equipment incl.
Specialized daily forecast for Sun Valley area at 6,000 and 9,000ft

Natural Resources Conservation Service (formerly SCS): Services and equipment
incl. access to Snow Course sites and data for our area

Sun Valley Heli-Ski: Services and equipment including shared data,
weather station maintenance and information from forecasters
(limited this year due to dry season) \$1,500.00

Sun Valley Company: Services and equipment incl. Access to Bald Mtn. weather
station, shared data and lift services. \$5,000.00
(Sun Valley Company also donated one-half the expense of River Run
Lodge and staff -\$1 500 for the Friends of SVAC SnowBall Fundraiser)

Observer Network: Volunteers participating in data collection
(limited this year due to dry, short season) \$500.00

THE FUTURE

The SVAC had an impressive season this year. Thanks to guaranteed funding for the year and a fully returning staff from last winter, we were able to operate at what we feel is our full capacity for the first time ever. With one full time position and two part time positions, we taught a record number of classes to a variety of students, worked with different media groups, and issued daily advisories throughout the winter. Our goals for the future are to continue to reach outlying communities and different groups of backcountry users, as well as to help inform the general public.

Goals for the future include:

- A new weather station at 9000 feet that is linked through the existing Titus Ridge (10,000ft) weather station that will provide us with hourly and real-time snow data for the Galena area.
- Additional outreach programs with Central Idaho communities, including Salmon, Stanley, Fairfield and Challis.
- Additional educational programs with the snowmachine community including more field oriented programs.
- Banners that will be posted outside the Stanley Ranger Station, SNRA Headquarters and Ketchum Ranger Station that allow motorists to see
"Avalanche and Mountain Weather Information
208-622-8027 www.avalanche.org"
along with the SVAC Logo
- Develop an observers e-mail form and discussion page to assist volunteer observers and promote the exchange of snow information
- Offer archived advisories for the entire season to allow better tracking of snow and weather trends for anyone interested.
- Research and pursue available grants for avalanche education

INTRODUCTION

The Forest Service Sun Valley Avalanche Center (SVAC) is a unique affiliation of federal agencies, local organizations and businesses, members of the outdoor industry, and individuals. Through the cooperative efforts of all these groups and individuals the Avalanche Center is a successful community project. Our goal is two fold: One, to provide avalanche and mountain weather advisories to the public and two, to provide and promote avalanche awareness and education. The SVAC is proud to be a part of a community partnership that benefits winter recreationists, Idaho travelers, local youth and winter visitors.

**WINTER 2001-2002, as part of the national network of Forest Service
Avalanche Centers We will be changing our name to:**

**THE SAWTOOTH
NATIONAL
FOREST
AVALANCHE
CENTER**

ACKNOWLEDGEMENTS

The Forest Service Sun Valley Avalanche Center (SVAC) is deeply indebted to the many who have helped support us this season. We'd like to thank all of the agencies, businesses and individuals that provided logistical support, financial support and observations to the avalanche center this past winter. Without your help, we wouldn't be able to provide this service.

The **Forest Service National Avalanche Center (NAC)** provided funds, leadership, and organizational direction. The NAC annually sponsors a pre-season discussion between Western Forecast Centers. This provides a helpful exchange of ideas, which allows for greater collaboration and communication between the individual centers.

The **National Weather Service** issued a daily "Sawtooth Avalanche Guidance Forecast" for 6,000 and 10,000 ft. elevations in the Sun Valley/Sawtooth Valley area and provided accurate target information for our forecast area. Rick Winther and Sharon Alden coordinated the program out of the Pocatello Weather Service office.

The **National Resource Conservation Service** contributed by allowing us access to their data from remote Snotel sites, and compiling monthly totals. This data has been an important component for formulating our backcountry forecasts.

Sun Valley Heli-Ski helps to maintain a weather station on Galena Summit in partnership with the Forest Service. They also provide extensive daily observations and snow study data, backcountry access when possible, and serve as a backup for computer operations at the SVAC.

Sun Valley Company provides daily support by maintaining a weather station at the top of Bald Mountain Ski Area and allowing data access. They also graciously assisted with the annual Snow Ball.

The **Avalanche Awareness Committee** provides invaluable enthusiasm and fundraising to promote the SVAC. **Martha** again donated her time and talent to update the SVAC brochure and to design the Snowball flyer. **Melissa Elkins** from the ERC and **Louise Stumph** and **Michael Malko** put in many hours assisting with the mail campaign and the annual Snow Ball.

Backwoods Mtn Sports and Sun Summit sold (at no profit to them) our Sun Valley Avalanche Center T-shirts to help raise money and spread awareness.

Continuing development of **The Youth Education Program** was made possible by some assistance and donations.

The **Environmental Resource Center** provides the non-profit umbrella for the Avalanche Awareness Committee and the Friends of the Sun Valley Avalanche Center, which is a project of the ERC. The ERC provides assistance in the way of tax-exempt status, bulk mailing privileges and office support. This will shift next year to the American Avalanche Association. Both groups deserve many thanks.

The National Avalanche Center's **Westwide Avalanche Network** (avalanche.org) provides a constant connection with the rest of the avalanche forecast community, provides internet posting of our daily advisory and hosted our website for the 2000-2001 season. **Cyberspace Snow and Avalanche Center** (csac.org) provides a daily e-mail service and internet posting of our avalanche advisory.

Dan Judd assisted us through out the season with computer programming and data organization. **Jay Gress** re-designed and installed changes to our website, and assists with internet computer projects.

Volunteer Observers, from a variety of backgrounds and interests, contributed data that assisted us in our daily advisories. Training and expertise varied considerably, and all of the information reinforced our premise that every observation helps to formulate the daily advisory.

Blaine County Rec District hosted the December Avalanche Class and raffled off a North Valley Trails season pass as a Friends contribution.

Patagonia helped to provide top of the line outdoor clothing that kept the forecasters warm and dry throughout the winter.

Power Engineers, provided a \$1,000 grant thanks to the efforts of **Steve Deal**

THE SUN VALLEY AVALANCHE CENTER

HISTORY

The Ketchum Ranger District of the Sawtooth National Forest has provided a recorded phone message since 1983, that gives callers daily avalanche and weather conditions. Butch Harper, district snow ranger from 1963 to 1994, implemented and directed this small program with help from Rick Barker, Sun Valley Heli-ski, the National Weather Service and the Soil conservation Service. Butch also taught avalanche awareness classes in the Sun Valley Area. His programs were among the first in the country to reach out to the winter recreational user on national forest land.

Butch retired in 1994 and Doug Abromeit, Director of the National Avalanche Center and former Snow Ranger from Alta, Utah, took the job as the winter recreation specialist for the Ketchum Ranger District. In 1995-96 the Forest Service program expanded to provide a more thorough avalanche advisory and mountain weather forecast based on improved weather instrumentation in remote sites and increased field observations. The program evolved into what is now the Forest service Sun Valley Avalanche Center, which Doug directs.

SVAC now offers several basic avalanche awareness classroom and field sessions throughout the winter in the Wood River Valley and outlying areas. We provide a daily avalanche advisory and mountain weather forecast based on data collected by forecasters, Sun Valley Heli-ski and volunteers. Sun Valley Heli-ski continues to provide an invaluable community partnership by sharing the expense and maintenance of our remote weather site and providing professional observations. Sun Valley Company maintains a weather station on Bald Mountain and allows us to access their data.

Winter recreation is on the rise and we continue to expand our educational programs to include snowshoers, snowmobilers and school children. We are grateful for the community support and all of our partnership affiliates that allow us to operate on a level that matches or exceeds the quality of leading avalanche centers in the country.

FORECAST AREA

The SVAC forecast area includes the Wood River Valley drainages from the town of Bellevue at the south end of the valley to the headwaters of the Salmon River at the north end of the valley. The geography changes dramatically along this corridor from high sagebrush desert at 5,000ft at the southern end, to mountainous terrain with peaks over 12,000 ft. This creates a varied snowpack. The forecast area is broken down into three major zones in order to identify these geographic/snowpack differences and communicate them to the public.

- 1) **North Valley-** ranging from Galena Summit and the headwaters of the Salmon River to the North Fork of the Big Wood River.
- 2) **Central Valley-** from North Fork to East Fork of the Big Wood River and Greenhorn Gulch
- 3) **South Valley-** from Greenhorn and East Fork south to Bellevue.

At times, the hazard evaluation may be similar for all zones, other times it can be distinctly different. We also offer information for the Stanley/ Sawtooth area and the Soldier Mtn/Fairfield area when possible.

AN OVERVIEW OF THE 2000-2001 SEASON

Central Idaho experienced a lean winter. Snow averages hovered near 50% throughout the season. Consequently, the snowpack remained weak and unsupportive in many places. Several relatively small snow storms in December and January prompted some avalanche cycles on the depth hoar. In February, snow and wind events appeared to be steering things toward a larger avalanche cycle, but we never received quite enough load and only had isolated avalanches and incidents. A warming event in early March produced moderate slide activity and promoted better stability within the snowpack. However, spring and summer snowpacks will be questionable with any isothermal conditions due to such extensively developed depth hoar. Throughout the winter, some close calls were reported but no full burials or serious accidents. In general, the people that were out riding or skiing seemed to pick good lines and showed a respect for the lingering instabilities.

In spite of such a dry winter, the Sun Valley Avalanche Center (SVAC) had what we consider a very successful season. The Center is becoming well known throughout the region. We taught 25 different classes to a variety of groups and in a number of outlying communities. Our education program expanded this year thanks to the national level funding Doug and Karl were able to obtain for all of the centers. In fact, we were so busy with classes we were unable to meet the demand. A sure sign of increased awareness, when attendance numbers go up and people ask for classes during a dry snow year. Students varied from elementary and middle school groups to boarders, skiers, snowmachiners, Search and Rescue, Idaho Power, National Weather Service Forecasters, and the Tri-State Snowmachine Groomers Association. We even taught a very successful field session on snowmachines, specifically for riders. Student numbers totaled over 900, which is an enormous increase for our Center (only a few hundred taught last year). Several Idaho media programs and Discovery profiled the Sun Valley Avalanche Center and included basic education and awareness tips.

Advisory hits (nearly 18,000 combined for the Westwide and CSAC advisory sites and over 9,600 for our homepage) and hotline calls (6,900) were higher than last season. We are pleased with these numbers as we had unusually dry conditions throughout the winter, as well as a late start and early finish. We continue to see a shift in numbers from phone use to internet access, but do retain a significant phone audience. A newly designed web page and a new advisory page, (thanks to Jay Gress), brought many comments of approval. The SVAC structured the advisories so that from Thanksgiving until mid-December, we offered general snow and weather information that was updated each weekend and mid week when needed. The last two weeks of March we scaled back from the daily advisory format to Monday postings of general information and 5-day weather. Friday, Saturday and Sunday mornings we offered a regular daily avalanche advisory. In this manner we met the needs of the public and were able to save money during a dry year. One of our best advisories, was when Anne Marie predicted a considerable chance of Pat and Margaret Deal welcoming Zachary Sean Deal into the world on February 23rd, and she was right!

The local radio station would broadcast how to reach the avalanche hotline and website daily, and promoted the services such as the hotline and upcoming classes that the avalanche center offered. When avalanche conditions were notable, they would put this on the radio at prime time in the mornings. The local TV station did a daily weather report and would include the avalanche advisory. Faxes and e-mails were sent to area ski, snowmobile shops and Idaho Power linemen. The Avalanche Center wrote a weekly column for the local newspaper called "Snow Savvy". It gave snow and avalanche tips about recognizing clues of instability or stability, how to practice safe travel and rescue. Jessica Wasilewski, our January Intern, assisted with classes, field work, and even wrote an article for Snow Savvy and produced the "Friends" Newsletter.

Of interest, is the shift of the "Friends of the Sun Valley Avalanche Center" from the umbrella of the local non-profit Environmental Resource Center (ERC), to become one of several Friends organizations under the American Avalanche Association umbrella. A positive move that everyone is happy with. The intent of the ERC was to help launch the Friends group and for them to move on in a few years.

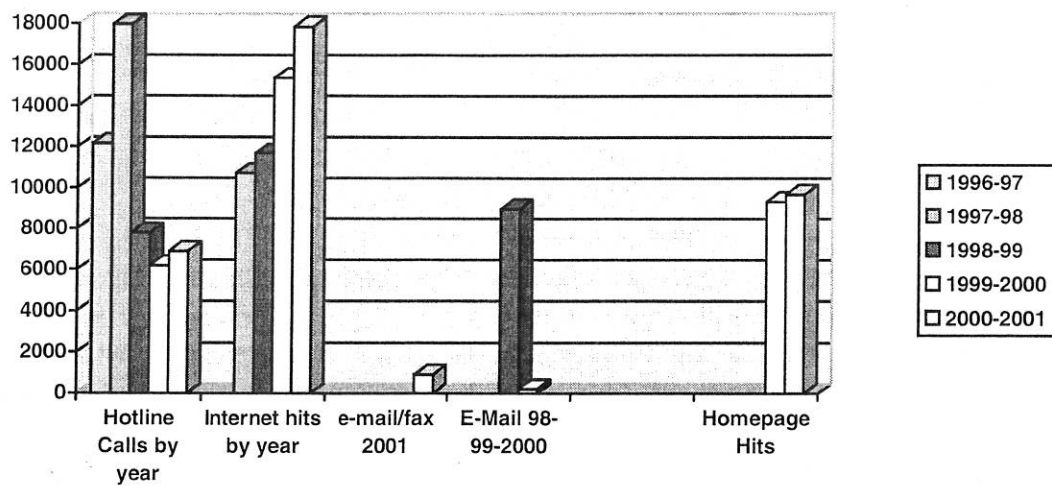
OPERATIONS 2000-2001

Hotline and Internet:

The Sun Valley Avalanche Center began putting out general avalanche information in early November due to a 30 inch snowstorm that fell in late October. As it turns out, the conditions following this storm were some of the best of the year, but there were not many people who had the foresight to get out and enjoy it that early! Meager storms were all that followed throughout the season, and this left us with a thin, weak and incredibly variable snowpack. However, despite the lack of storms, snowpack stability was very tricky to evaluate, and this made the avalanche center service even more valuable.

We began putting out daily advisories in mid-December, and finished the season early, at the beginning of April, due to the rapid onset of spring. Despite the unusually dry conditions this winter and our shorter season, the numbers of callers to our hotline, (6,900) were up this year. The internet (18,000 hits) continues to be a popular way for people to get the advisory, and thanks to Jay Gress, a Friends of SVAC board member, we had a great updated web page this year with links to weather, SNOTEL and education sites. The home page received over 9,600 hits.

New this year is the Forest Service National Avalanche Center website, available through www.avalanche.org. This site has a great "Day in the Backcountry" tutorial with everything from what gear to pack to how to perform stability tests. It also includes an interactive backcountry tour, which makes backcountry travelers choose what course of action to take in a tough situation. Many other centers put links to this page off of their home pages.



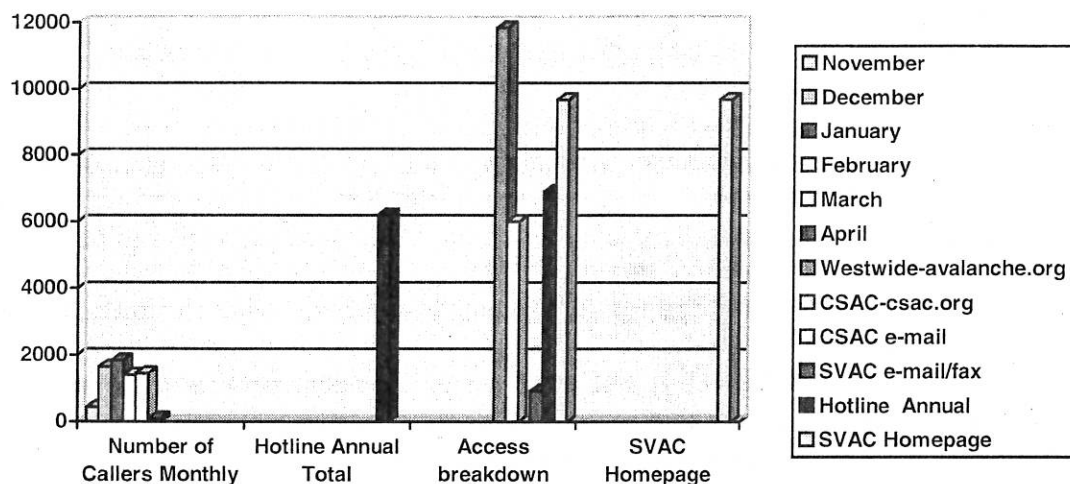
AVALANCHE ADVISORY USE PATTERNS since 1996

YEAR	Hotline	Observer Line	Westwide	CSAC	CSAC e-mail	SVAC e-mail/fax
1996-97	12,167	unavailable.....				
1997-98	7,271	857	8,700	2,000	unavailable	
1998-99	7,780	791	7,800	3,864	8,955	
1999-2000	6,193	unavailable	9,353	6,000	270 (fee charged)	
2000-2001	6,900	unavailable	11,851	6,000		920

Annual Number of Bulletin Accesses (EXCLUDING OBSERVER LINE)

2000-2001	25,671 (plus 9,684 home page hits)
1999-2000	21,816 (plus 9,319 Homepage hits)
1998-99	28,399
1997-98	17,971
1996-97	12,167 (only hotline due to website numbers unknown)





NUMBER OF CALLS BY MONTH

	Hot Line	Internet Sites
NOVEMBER:	435	(monthly data not available)
DECEMBER:	1,650	
JANUARY:	1,844	
FEBRUARY:	1,449	
MARCH:	1,410	
APRIL:	112	

Year	Hotline	Westwide	CSAC	CSAC e-mail	SVAC e-mail/fax	Homepage
2000-2001	6,900	11,851	6,000	unavailable	920	9,684

Annual Number of Bulletin Accesses (EXCLUDING OBSERVER LINE)

2000-2001: 25,671 (plus 9684 homepage hits)
 1999-2000: 21,816 (plus 9,319 homepage hits)
 1998-99: 28,399
 1997-98: 17,971

Sun Valley Avalanche Center
Avalanche Advisory User Numbers
2000-2001

This past season, in spite of a late start and an early finish and a limited number of storms, we saw an increase in all user numbers. This mirrors the increased awareness in our area.

Accidents

In North America this winter there were 40**** avalanche fatalities, with an additional 60 people reported being caught. The good news this winter, is what seems to be the increasing number of reports of full burials where the person was recovered alive by their own party. This means that avalanche education is working in some ways; people are starting to carry the necessary equipment, and are able to use it effectively. The troubling aspect is that people are making the same mistakes that lead to serious accidents. If you look at most accidents, simple safe travel methods such as one at a time on a slope and communicating and watching each other could drastically reduce the number of deaths or burials.

Because our snowpack was so weak this year, we emphasized safe travel techniques continuously on the advisory. We had no accidents in our forecast area, there were several near misses, but fortunately no one was buried or injured. Based on observations of where people were playing this winter, it seemed people were notching it back a little in light of the weak snowpack situation. Mother Nature handed out plenty of instability warnings with continuous collapsing and cracking throughout the winter, and this may well have contributed to the lack of accidents this winter in our area. Hopefully, awareness and education have helped people make good decisions in the backcountry, particularly in a year with such an unpredictable snowpack.

Just after the Avalanche Center issued their last general springtime advisory, a solo skier triggered a large slide in the northwest bowl of Galena Peak. He was engulfed in the debris and carried 600 vertical feet, coming to rest on top of 10-15 foot deep debris piles with only a sprained thumb. The slide was classified as SS-3+-AS-O/G, 250 yards long crown face and 2-4 feet deep. It appeared to be triggered from a shallow depth hoar spot in the snowpack and the slope had been recently loaded by a 12" snowstorm.

Education

Demand for avalanche education has continued to increase, and the center has responded by increasing our numbers of classes and expanding our outreach to different audiences. We had a very busy class schedule this year, and fortunately last winter, we were able to hire Pat Deal as another part-time forecaster to help share the class load. We taught 25 different classes to a variety of groups. Groups we taught included elementary and middle school students, skiers, boarders and snowmachiners, search and rescue groups, Idaho Power lineman, National Weather Service forecasters, the Tri-State Groomers Association, and Elder Hostel. We traveled to the communities of Challis, Stanley and Fairfield to offer classes that were all well attended. Student numbers totaled over 900, which is an enormous increase for our center (only a few hundred last year). This increase is due in large part of the increase in funding Doug and Karl obtained for all of the centers. We were able to advertise our classes more effectively, and in general get the word out better.

Backwoods Mountain Sports again held beacon clinics every Thursday afternoon, and although the number of people attending was not staggering, we really appreciate this service. It also helps us stay up to date with innovations in beacons.

The avalanche center staff continued their personal education by attending the International Snow Science Workshop, a symposium held every two years with avalanche professionals from around the world. We also had two visits from National Weather Service forecasters, who helped us improve our understanding of weather maps and trends. Anne Marie and Janet were able to participate as instructors for the Alaska Mountain Safety Center and for the NOLS Instructors program in Driggs. We strongly believe that the opportunity to teach with other programs offers an excellent exchange of ideas and teaching techniques.

Youth Education Programs

The 2000-2001 season saw some advancement for youth programs. The biggest effort focused on getting an annual assembly that would be an avalanche awareness class for the Middle School age youth. Specifically, the 7th grade. This has been a real challenge since there is already a very tight schedule and curriculum based needs. The Avalanche Center exchanged numerous phone calls and conversations this winter along these lines, without success. We haven't given up, and we plan on renewing efforts this summer to obtain a time slot. We feel that this is the best age group to target for avalanche education. The Gallatin National Forest Avalanche Center based in Bozeman, MT has been able to get approval in the Montana school system and we feel that this will help us to gain acceptance in Idaho.

Along other venues, the Avalanche Center was able to teach a 2 hour program including an hour outside with the Stanley school- 43 children grades 1-8, and a number of their parents attended. This class had a lot of fun exercises and props to keep all ages engaged. We were able to do a classroom session and an entire field day with the Sun Valley Ski Education Foundation Snowboard team 15 students. Our regular evening awareness classes have had 5 to 10, local middle school to high school age youth attending each session as well. For our Challis class, the local high school teacher gave students extra credit if they attended our January evening class and we had 5 or 6 attendees from the high school.

The National Avalanche Center Web site has been an excellent instructional tool for middle school and high school students. We have been able to steer many students towards this site and have gotten great reviews from teachers and students alike. The site offers basic avalanche info in the form of a "slide guide" for skiers & boarders and a separate slide guide that addresses the specific concerns of snowmachiners. The site also offers an interactive backcountry tour where you can click your way along a day in the backcountry while making avalanche safety related decisions. It is difficult to track use since the counter crashed mid-season, but the total hits are well into the thousands since the site's inception this winter.

In the works is a National Avalanche Center video that focuses on the Free Riding, Extreme skiing and boarding groups. It provides exciting footage and behind the scene looks at the avalanche safety practices of all these groups. This video helps to promote the fact that it is "hip" to think and practice avalanche safety. Excellent avalanche information and skills are demonstrated throughout the video. This should be available by next season and will be sure to appeal to the skiing and boarding youth.

Staff

Doug Abromeit, director of the National Avalanche Center and Winter Recreation specialist for the Ketchum Ranger District continued to oversee operations of the Sun Valley Avalanche Center, as well as fundraising for all of the centers. Lead forecaster Janet Kellam finished her fifth season for the center and her tireless efforts towards improving the center really paid off. Anne Marie Devereaux finished her third season with the center, and saw snowpack conditions that she has never seen before, which were very educational. Pat Deal came on as regular part-time and did a great job, particularly with the snowmachine audience, and really got out into the snowmachiners backcountry. David Gordon continued assisting us with one forecast a week and with classes. David's insightful forecasts and dedicated field observations are a great asset to the center.

Observer Network

This was a difficult year to get observers excited about the snowpack. People were not getting out like they would be in a typical winter, and Sun Valley Heli-ski did not operate at all, which left a big gap in our daily observations. However, the dedicated folks that get out into the backcountry no matter what, were very good about either calling our observer voicemail, or calling one of us with what they were seeing. We were also in a perpetual state of "what will happen if we get a load on this snowpack" and the load never came, so there was not a lot of slide activity to report except for some smaller avalanche cycles.

We sent out an observer's letter early in the season to nudge people a little to call in observations, but since people were just plain blasé about the winter in general, we did not get a lot of response. We will keep trying!

Media

Throughout the west, dry conditions led to very weak snowpack conditions, which in turn led to avalanche accidents. The media is always quick to cover accidents, and in spite of some dramatization, the news helps spread awareness about avalanches.

There were numerous articles in newspapers and magazines throughout Idaho on avalanches, as well as 2 different in depth news stories by ABC and NBC Boise TV stations. In addition, the Discovery channel profiled the Sun Valley Avalanche center as part of a film that will be broadcast next winter.

Locally, we continued to write our weekly column "Snow Savvy" (see appendix) in the Wood River Journal. The local radio station broadcasted daily how to reach the avalanche hotline and website, and when conditions were notable, they would air this during prime time in the morning. The local TV station did a daily weather report and included the avalanche advisory. (We learned quickly that we needed to educate the media personnel so that information would be disseminated accurately, not paraphrased, and continue to work at this.) Faxes and e-mails were sent to local ski and snowmobile shops and to Idaho power. Finally, our January intern Jessica Waszilewski did a great "Friends" newsletter that was sent out to everyone on our mailing list.

Fundraising

The Friends of the Sun Valley Avalanche Center was started as a project of the Environmental Resource Center, and it is one of their goals to help launch non-profits until they can stand on their own. We are sincerely grateful to the ERC for their support, but it is time for us to move on. We will be moving our organization to the American Avalanche Association, (AAA) which will be acting as the umbrella organization for several of the avalanche centers "friends groups" in the west. This is a great place for us to be permanently, and the percentage of our funds that they take will be put back into the avalanche community, so it is a win-win situation.

Committee members of the "Friends of the SVAC" are:

Louise Stumph, Michael Malko, Sara Berquist, Rob King, Steve Wolper, Nils Ribí, Mark and Martha Deffe, Michael Kraynick, Jay Gress, Dennis Davis, and Nancy Monk. Thanks to you all!

Our fundraising events were very successful this year and included:

The Avalanche Center Snowball- Our favorite and local legendary band, The Sensational Toastpoints, again graced our snowball with their great music. The Sun Valley Co. discounted the price of River Run Lodge, a great venue for this event, and also discounted the price of a seasons pass for our raffle. Michael Malko spent a great deal of time gathering up awesome donated prizes and locals donated as well, so our raffle was a great success.

Fundraising Mailing- Our mailing again combined donor envelopes with raffle tickets for the snowball, and this has proved to be very successful to get people to donate-the chance to win something seems to encourage donations. Louise Stumph was again extremely helpful with our fundraising, and we are very appreciative of her efforts.

Hotline Sponsorship- Most of the businesses that have previously sponsored the hotline were again signed up to donate generously when we were informed that we could not accept donations in exchange for a hotline "brought to you by" message. This was an unfortunate situation as these donations have really helped to cover the cost of the hotline in the past.

T-Shirt Sales- Backwoods Mountain Sports and Sun Summit retail shops have continued to allow us to sell our T-shirts. They were a popular Christmas gift this year and sales have been good. We may switch to hats for next year.

The total raised through all of these events was over \$8000. Again, we are very thankful for the support.

MONTHLY SUMMARIES 2000-20001

August 31st through September 4th mixed rain and snow. Most snow melted at upper elevations except pockets observed shaded, due north at upper elevations, especially Pioneer Mtns. Some upper elevation sites showed nearly 2" precipitation H₂O.

September 22nd - mixed rain and snow event, approximately 12" in the Pioneers, only a few inches in the northern Sawtooths. All melted by Oct 7th except for scattered upper elevation small, due north pockets or shady areas.

Oct 9-10- Significant precipitation. Rain low, snow above 7,000ft

This trend continued through the month of October; it was a very wet month. By the first week in November people were boarding and skiing in select places on Galena Summit. A consistent 24" total snow depth coverage on Baldy and top of Galena Summit. Supportable the weekend of November 11th, but cold temperatures beginning to deteriorate the pack. In most areas, a few inches of intermediate facets on the ground, a deteriorating melt/freeze and rain crust above that, then the upper layers consisting of newer snow, some wind drifted and some becoming sun affected. Some surface hoar formed in cooler locations.

NOVEMBER 2000

Clear and dry. Lower elevations have bare south slopes and shallow faceted snowpack on north facing or shady slopes. Mid to upper elevations south facing slopes vary, a MF crust on the ground at upper elevations, matrix of facets and crusts on top of this. Mid to upper elevation North West has ground MF 8-10 cm then mostly facets. All other Northerly aspects are facets. Some varied surface hoar

Month of November Precipitation Records:

	<u>November</u>	<u>Water Year</u>
Galena Summit: 1.4"H ₂ O,	34% of average November(4.10")	91% of avg as of Oct 1st
Big Wood Drainage	38% of average November	104% of avg as of Oct
1st		
Salmon River Drainage	42% of average November	85% of avg as of Oct 1st

Note: KRD recorded .6"H₂O, 7" snow 5" total depth EOM

DECEMBER 2000

The month was very dry with warm and cold spells. Only significant storm was very light density snow, accompanied by strong winds that eventually hit all directions of the compass. Low elevations very little snow, month ending with bare South slopes at low to mid elevations. Subsequently we were facing a very uneven slab that was overlying extremely well developed facets. Considerable avalanche danger for a long time due to prolonged sensitivity of snowpack. Extensive collapsing, propagation cracks. Several close calls: Baker Creek & Vienna Mine area. They were all snowmobilers highmarking and triggering slides from below. Incidents occurred even 2 weeks after load-producing snowfall (storm #3) Most people were traveling and playing with very conservative lines.

Month of December Precipitation Records:

	<u>December</u>	<u>Water Year</u>
Galena Summit 2.0 "H2O,	45% of average December(4.4")	72% of avg as of Oct 1st
Big Wood Drainage	46% of average December	79% of avg as of Oct 1st
Salmon River Drainage	54% of average December	72% of avg as of Oct 1st

JANUARY 2001

January repeated the dry pattern. The Southern Wood River Valley received significantly more precipitation than the north end or than the Sawtooth Valley. Baldy showed an accumulation of 26 inches for the month, and Galena Summit received only 16 inches total. The first part of the month, the mid to lower elevations experienced a slide cycle of the newer snow on the depth hoar, although nothing was too big. The avalanche danger varied from Considerable to Moderate throughout the month. Any storms created small loads in pocket areas and we would see sporadic releases.

Month of January Precipitation Records:

		<u>Water Year</u>
Galena Summit 1.0"H2O,	23% of average January (4.3")	57% of avg as of Oct 1st
Big Wood Drainage	39% of average	67% of avg as of Oct 1st
Salmon River Drainage	28% of average	58% of avg as of Oct 1 st

FEBRUARY 2001

Yet another dry month. This time Galena Summit received slightly greater amounts than Baldy did. 23" vs 17". Still very meager and barely supportive conditions for fat skis and boards, or supportive for others only in select areas that had a slightly denser snowpack all winter. Difficult travel for snow machines off packed trails. Some strong wind events created loaded pockets but overall the pack was generally weak without quite enough of a load or slab development. Moderate Avalanche danger was the persistent advisory throughout the month.

Month of February Precipitation Records:

		<u>Water Year</u>
Galena Summit	1.3 "H2O 43% of average February(3.5")	57% of avg as of Oct 1st
Big Wood Drainage	35% of average	61% of avg as of Oct 1st
Salmon River Drainage	44 % of average	56% of avg as of Oct 1st

MARCH 2001

As for March, you guessed it. Once again we received minimal snow. Overall, the winter had been cooler than normal, thus the shallow pack constantly returned to faceted grains in most places in spite of the small snowfalls. Early in the month a series of strong winds and light snows finally loaded the snowpack in enough places that natural and triggered releases were reported from South to North Valley once the sun heated the slabs slightly. Shortly after this we finally experienced an isothermal warm up that produced a run of depth hoar slides in the mid to low elevation south valley areas, and upper elevation surface slides. By this point, most people had given up the idea of getting into the backcountry because it took too much planning to find the good conditions, even though there were some. A second isothermal warm up and rainstorm near the end of the month helped to promote spring conditions on the sunnier aspects at mid to upper elevations. Many areas the corn crust bridged weak, depth hoar that was beginning to MF but so large a grain that once the bridge failed you punched into air or mush. A lot of the low elevation terrain was already melted out by the end of the month.

Month of March Precipitation Records:

		<u>Water Year</u>
Galena Summit	1.4 "H2O, 47% of average March (3.0")	52% of avg as of Oct 1st
Big Wood Drainage	51% of average	60% of avg as of Oct 1st
Salmon River Drainage	66% of average	57% of avg as of Oct 1 st

APRIL 2001

The Avalanche Center thought it had issued its last advisory the weekend of April 1st. With only patches of snow on the ground in Ketchum and bare south slopes, backcountry interest was at an all time low. Interestingly enough, winter returned for a spell early in the month and brought good freezes and powder snow for those that were willing to hike a bit. It also brought an increased load to the snowpack. A lone skier triggered a large avalanche in the northwest bowl of Galena peak. He was engulfed in the debris and taken 600 vertical feet only to end up on top. The slide was classified as SS-3+-AS-O/G 2,500 foot crown, ran 1,200 vertical feet 2-4 foot deep crown face. Probably triggered from a shallow spot in the snowpack where a rocky outcropping was surrounded by facets.

Due to a number of storms and strong winds, we offered general information updates each Monday and Friday until April 15th. The latter half of April brought a two different slide cycles. One was an isothermal wet slide cycle where wet pocket slabs and point releases were visible at upper elevations on NE through NW aspects. This consisted of all of the accumulated snow on top of the depth hoar. Most slides were class 2 to smaller 3s. The other cycle was new snowfall and warming induced. Precipitation rates of up to 3 inches per hour were recorded and gusty winds. Numerous upper elevation slabs pulled out, some breaking through a couple layers of snow and some eventually digging into the ground layer of facets. North East to North West again were the aspects observed. Old snow surfaces could have been crusts and/or faceted snow layers. A couple skier released slide were reported including a skier taking a 300 foot ride into Titus Lake in one of the East facing gullies. Another was triggered from a distance, a S/SE facing slope above Williams yurt. Fairly good sized, it was a 1-2ft crown, wind slab on facets & crust, 100ft wide and ran 100ft.

Our closing bulletin with general spring and summer information was issued May 4th.

Month of April Precipitation Records:

		<u>Water Year</u>
Galena Summit	3.1 "H2O, 148% of average April (2.1")	61% of avg as of Oct 1 st 14.1" vs 23.1" avg
Big Wood Drainage	144% of average	67% of avg as of Oct 1 st
Salmon River Drainage	152% of average	66% of avg as of Oct 1 st

BUDGET: 2000-2001

The Sun Valley Avalanche Center operates on a very modest budget. Operations would not be possible at such a professional level, if not for Friends of SVAC fundraising, for numerous hours of volunteer time donated by forecasters and observers, for the sharing of services provided by the Boise National Weather Service and the Natural Resource Conservation Agency, and untold hours of data collection and analysis from Sun Valley Heli-Ski Guides. Sun Valley Heli-Ski also shares a remote weather station and computer data link to this site with the Sun Valley Avalanche Center. Sun Valley Company shares their weather information site and access. The local Community School has generously opened their classrooms for us to teach evening Avalanche Awareness Classes throughout the winter. Blaine County Rec District sponsors our first local class of the season, which attracts a large audience. Again, the citizen's Avalanche Awareness Committee did a phenomenal job in reaching out to the community with a fundraising campaign that brought in over 18,000.00 dollars. (A note: The Forest Service Sun Valley Avalanche Center does not receive any funding from the user fee/trailhead parking pass-demo program.) Any budget surpluses will go towards the purchase of new equipment for maintaining the hotline phone system, weather instrumentation or computer needs.

Doug Abromeit and Karl Birkeland of the Forest Service National Avalanche Center have been working very hard to gain national recognition for all of the avalanche forecast centers. It appears, that some national level funding may continue in the year 2001-2002 to augment the local, regional and partnership funding that forms the budgets of the various avalanche centers.

Some Comparison Notes: The Snowball brought in approximately \$10,000.00 but expenses of promotion, printing and mailing, band, facility, seasons pass and beacon prizes left a net gain of approximately \$6,000.00. Donations again brought in approximately \$10,000.00. Because we knew we had some extra money in the bank, the Avalanche Center chose to take on as many classes as we could physically teach in the midst of our operating season. This allowed us to get a good estimate of what it would cost us to operate at this level on an annual basis. We can see that we need to generate more income.

Due to Forest Service regulations, we were unable to have a sponsorship program of the hotline or internet site this past season. We hope to change this for the 2001-2002 season and plan to offer sponsorship of both the hotline and our internet pages by complying with specific wording and regulations.

A focus for the 2001-2002 season will be to pursue more grants from foundations and local groups in order to finance our additional avalanche education programs.

CONTRIBUTIONS AND FUNDING from 2000-2001

Friends of the Sun Valley Avalanche Center Donations		
mail campaign & events (Snowball & Raffle)	16,000.00	
classes	1,295.00	
T-shirts	1,126.00	
	subtotal	(18,421.00)
Region 4 USFS	19,000.00	
USFS Winter Recreation Specialists, office and equipment use	subtotal	(37,421.00)
incl. Weather station, computer, local travel	5,000.00	
<u>TOTAL</u>	<u>42,421.00</u>	

EXPENDITURES: 2000-2001

Forecaster Salaries	36,500.00	
Travel	1,400.00	
Equipment & Supplies, incl snowmobile maintenance	1,600.00	
	subtotal	(39,500.00)
Computer software, programming, datalogger repair	180.00	
Printing incl. stickers, posters, photographic expenses	1,500.00	
Internet Fees	179.55	
Hotline Fees	1,500.00	
ERC Administration Fee (2000-2001)	684.24	
USFS Winter Recreation Specialists, office and equipment use	subtotal	(43,543.79)
incl. Weather Station, computer and local travel	5,000.00	
<u>TOTAL</u>	<u>48,543.79</u>	
	Deficit <6,122.79>	

IN-KIND CONTRIBUTIONS OF EQUIPMENT AND LABOR:

The Sun Valley Avalanche Center relies not only on cash contributions, but the more than \$7,000 in donated equipment, services and labor from community members, businesses and agencies. It is unmistakable that the SVAC would not be able to operate at it's current level if not for these donations.

Boise National Weather Service: Services and equipment incl.
Specialized daily forecast for Sun Valley area at 6,000 and 9,000ft

Natural Resources Conservation Service (formerly SCS): Services and equipment
incl. access to Snow Course sites and data for our area

Sun Valley Heli-Ski: Services and equipment including shared data,
weather station maintenance and information from forecasters
(limited this year due to dry season) \$1,500.00

Sun Valley Company: Services and equipment incl. Access to Bald Mtn. weather
station, shared data and lift services. \$5,000.00
(Sun Valley Company also donated one-half the expense of River Run
Lodge and staff -\$1 500 for the Friends of SVAC SnowBall Fundraiser)

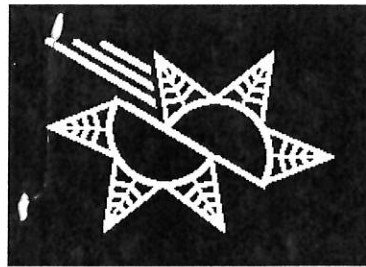
Observer Network: Volunteers participating in data collection
(limited this year due to dry, short season) \$500.00

THE FUTURE

The SVAC had an impressive season this year. Thanks to guaranteed funding for the year and a fully returning staff from last winter, we were able to operate at what we feel is our full capacity for the first time ever. With one full time position and two part time positions, we taught a record number of classes to a variety of students, worked with different media groups, and issued daily advisories throughout the winter. Our goals for the future are to continue to reach outlying communities and different groups of backcountry users, as well as to help inform the general public.

Goals for the future include:

- A new weather station at 9000 feet that is linked through the existing Titus Ridge (10,000ft) weather station that will provide us with hourly and real-time snow data for the Galena area.
- Additional outreach programs with Central Idaho communities, including Salmon, Stanley, Fairfield and Challis.
- Additional educational programs with the snowmachine community including more field oriented programs.
- Banners that will be posted outside the Stanley Ranger Station, SNRA Headquarters and Ketchum Ranger Station that allow motorists to see
"Avalanche and Mountain Weather Information
208-622-8027 www.avalanche.org"
along with the SVAC Logo
- Develop an observers e-mail form and discussion page to assist volunteer observers and promote the exchange of snow information
- Offer archived advisories for the entire season to allow better tracking of snow and weather trends for anyone interested.
- Research and pursue available grants for avalanche education



SUN VALLEY
AVALANCHE
C E N T E R

APPENDIX

Annual Report 2000-2001

- 1. Classes, Outreach & Medial Contacts List**
- 2 Sample Advisories**
- 3. Friends of the Sun Valley Avalanche Center Snowball fundraiser mailing**
- 4. Selected Newspaper and Magazine Articles**
- 5. Useful Internet Sites and Forest Service Avalanche Forecast Center List**

CLASSES & OUTREACH
including Media Contacts 2000-2001

Class Presentations

10/19/2000 Pocatello NOAA office: SV avalanche center and awareness presentation to staff (15 people)

12/02/00 Wood River Valley Winter Coalition Snowmobile/Ski Courtesy groups
1 hour basic awareness & hotline/website info 50 people

12/05/00 SVAC/BCRD Basic Awareness 3hr December classroom
including FS/SNRA visitor center personnel: 86 Students
NOAA Pocatello Weather Service: forecasters attended awareness class and trip in field with them to Galena Summit. 12/5-6/00, & 1/10-11/01 (3 total- Rick Winther, Sharon Alden, Vernon Preston)

12/09/00 Basic Awareness Field Session 37 students

12/00 Stanley Ski Club Meeting
brief avalanche talk and Hotline/Web access: 20 members
SVSEF SnowBoard Team all class & field: 20 students
KSVCS 8th grade all day class & field: 30 (kids & teachers)

12/07/00 Idaho Power
3 hour Avalanche Awareness class, Beacon & Rescue Clinic: 20 people
contact: Tom Furtaw, Hailey 727-7067, Misty: Hailey office 788-8059

12/18/00 Beacon/Rescue Clinic with Elephant's Perch staff : 10

1/10/01 Basic Awareness 3hr January Classroom: 42 students

1/11/01 Blaine Co. Search & Rescue 2 hour Awareness Class: 20 students

1/13/01 Basic Awareness Field Session: 28 students

1/15/01 Beacon Clinic: Snowmachiners @Woodside RV
Zero attended (don't do next year)

1/17/01 Challis area 3 Hour Basic Awareness Classroom: 30 people
(develop local contacts Challis & Stanley, Mackay, Salmon)
Challis messenger, Arco, others? USFS, BLM Press Releases

1/22/01, 3/4/01, 3/11/01 Elder Hostel 2 hour Awareness & 1 1/2 hour Field session
(15,15,18 students):48

1/24/01 Stanley School & parents Basic Awareness grade 1-8
Classroom & outdoors 1:00-3:30/ 43 kids, 7 parents 2 teachers 2 aides: 54

1/30/01 Ketchum-Sun Valley Rotary 1/2 hour awareness: 50
1/30/01 Basic Awareness Classroom Snowmachine oriented: 20
2/03/01 Field Session Snowmachines at Baker Creek: 10
2/5-8 Level II Instructors NOLS Class: 10
3/06/01 Fairfield SAR snowmachine class 3 hr evening: 35
3/13/01 Tri State Groomers workshop Snowmachine Oriented
3 hrs incl beacon drill: 60 plus attending
3/16-19/01 AMSC Alaska Level I class skier/boarder/snomachine: 30
Beacon/Rescue Clinics w/ Backwoods: ongoing weekly Thursdays 3pm
beginning Mid-December to March 1st (avg. 3 per session): 30

Additional Outreach & Media

Idaho DOT informal discussions & continual contacts, ongoing

KECH Radio: ongoing class promotion, avalanche conditions & hotline, Range report
daily offers hotline number and brief awareness info

Ketchum Channel 13 Weather 7:30 daily with avalanche report faxed to them

SNOW SAVVY 11/27/00-3/28/01

weekly column in Wood River Journal on front page of Sports section

ELEVATION Magazine Winter 2001 issue: Avalanche article by Anne Marie Devereaux

1/04/01 Fox News NBC Channel 12 KTRV Nampa-Boise special
SVAC, NAC and depth hoar avalanche conditions 2000-01
Kelly Goss 466-5513

2/14/01 Boise ABC Channel 6 "6 at 6" special on avalanches and center aired 3x

2/20/01 Discovery Channel filmed a segment about avalanches and the center to air
2001-2002 season

Twin Falls-Times News recreation article For season opener -last week November in
"Outside" section

Boise Idaho Statesman Outdoors Section

Hotline numbers Payette, Sun Valley, Jackson, Logan

Periodic articles about snow, avalanches and conditions

Outside magazine On-Line: Mike Robertson 415-398-2627

Internet site/Friday avalanche summaries and links to AFC's. We do not know if
this ever evolved, but we helped them design it when they were researching.

START

FOREST SERVICE SUN VALLEY AVALANCHE CENTER

Good Morning, this is Janet Kellam with the Forest Service Sun Valley Avalanche Center with the Backcountry Avalanche Advisory and Weather Forecast for Friday, January 5th, 2000 at 7am.

AVALANCHE CONDITIONS:

This past week, we have continued to see only incremental improvements in the snowpack. This is due to the fact that we are facing conditions that promote prolonged instability. We have a very different problem than new snow, slab avalanches. It is true that when we get any new snowfall it will act like a trigger on the existing snowpack. But at the moment the snowpack will react to other triggers like the weight of a person on a steeper slope.

You have heard us constantly speak of weak, old November snow that is lying beneath the snow surface. This weak, sugary snow can support some, but not much weight on top of it. The biggest problem that we have now is the fact that our snowpack is quite variable and it is hard to identify the areas of a thinner or weaker December snowlayer, where it will be easier to trigger an avalanche.

- Most likely, the triggerpoints will be down in the slopes or towards the bottom of wind rolls, near rock outcroppings or around buried rocks, or near trees. This is why it is important to carefully evaluate each slope and area that you choose to play or travel in, make conservative decisions and have all of your safety backups in place. Only one person on a slope at a time, pay close attention to slope angles that you are on or beneath, carry beacons probes shovels and be well practiced at performing a rescue.

The steeper the slope, the greater the chances of triggering an avalanche. Areas that have slope angles as steep as the slopes in the Lower Bowls on Baldy (upper 30 degree slope angles) will have a pretty high probability of producing an avalanche with the right trigger in the right place. A bit of a Russian roulette game.

With last night's warm temperatures and the forecast for continued warm temps in front of the small short wave system passing over the top of us, I would make conservative choices through the heat of the day.

ning.
try A

BOTTOM LINE:

Today the avalanche danger is estimated to be:

Generally MODERATE on The low to mid 30 degree angle slopes, increasing to CONSIDERABLE as you get into the upper 30 degree slope angles.

Moderate Danger: means natural avalanches are unlikely, human triggered avalanches are possible

Considerable Danger: means that natural avalanches are possible, human triggered avalanches are probable and unstable slabs are probable on steep terrain.

TIP FOR THE DAY:

With this beautiful weather, now is a great opportunity to get outside.

It is the perfect time to start thinking ahead. In addition to our weak underlying layers we have developed sugary snow and surface hoar on top of the snowpack as well as some crust layers. If you get out this weekend, make a mental inventory of the places that will be most likely to have avalanches if we get any new snow on top of what is there.

UPCOMING AVALANCHE CLASSES:

Basic Avalanche Classes-January 10th, Wednesday night, 6-9pm at the Community School.

Wednesday January 17th at the Yankee Fork Interpretive Center in Challis. 7-10 PM

A snowmachine oriented class will be at Hailey Elementary Tuesday January 30th.

Beacon Clinics sponsored by Backwoods each Thursday at 3pm next to the New Smith Building.

Beacon Clinic Monday night January 15th from 6-9Pm at Woodside RV in Hailey.

WEATHER DISCUSSION:

Local Forecast: Continued High Pressure with some warming and high clouds today. We have already seen a shift in ridgetop winds to a more Southwesterly flow and a slight barometer drop as the small low pressure system glides over the top of our Big High. The inversion may break up a bit in the upper valleys. Saturday, slightly cooler temps.

Ridgetop winds: Out of the west, 20-30 on Titus and less on Baldy

10,000ft temps:

max: near 35 and I would say possibly higher since it is 30 degrees on Titus at 6am.

min: 20-25 tonight

valley floor: max temp: as high as 45 in Hailey min: into the single digits in the cooler spots

Galena Summit Temperatures:

Onite low & currently: 29 (slightly warmer up on Titus) max temp: 37

Titus Ridge Winds at 10,000ft:

Currently: 13SW 24hr avg: 15W Max gust: 28NW

Eternal storm interval # 4

No new snow but we are growing a healthy crop of Surface Hoar in many locations.

Total depth at Galena Summit: 30"

Bald Mtn. At 9000ft reports:

Onite low & presently: only 31 Max temp: 39

Winds currently: 7SW 24hr. average: 8NW max gust: 23NW

Total depth: 30"

Valley Floor at 5800ft reports:

Onite low: 18 max temp: 41

Total depth: 12"

Any and all snow and weather observations are very helpful to us. Please call our observer hotline at 622-0099 if you do get out today.

This forecast and lots of great avalanche information is available daily on the internet at www.avalanche.org and www.csac.org. To subscribe to a daily e-mail service of this advisory, go through csac.org.

This forecast only applies to the backcountry and it is based on a limited number of observations in specific locations.

END

START

FOREST SERVICE SUN VALLEY AVALANCHE CENTER

Good Morning, this is Patrick Deal with the Forest Service Sun Valley Avalanche Center with the Backcountry Avalanche Advisory and Weather Forecast for Wednesday January 24, 2001 at 7am.

Today the avalanche danger is estimated to be: Generally MODERATE with areas of CONSIDERABLE hazard isolated to recently wind loaded slopes and cooler shady aspects. The areas of instability are being found on slopes steeper than approximately 35-degrees.

MODERATE DANGER: means natural avalanches are unlikely, human triggered avalanches are possible, and unstable slabs are possible on steep terrain.

CONSIDERABLE DANGER: means that natural avalanches are possible, human triggered avalanches are probable and unstable slabs are probable on steep terrain.

HERE' S WHY:

The areas of higher hazard were confirmed on the cooler shady aspects again yesterday. Stability tests around Baldy on the western exposures showed for a very weak snowpack, which is made up of 50% dry sugary snow (depth hoar) and 50% new snow that is starting to bond together forming a soft slab on top of the weak underlying snow. Test results showed poor stability. While I was exiting this area the snow was collapsing and propagating on a 26-degree slope angle. These are warning signs of instability. If you choose to ski these areas after the next storm due to arrive tonight, good backcountry skills and avalanche knowledge will be mandatory. Remember that your group may not trigger a slide but another group above you may.

The winds have been averaging about 20 mph and gusting to 45 mph for the last 24 hours and blowing out of the southeast. This is a prime wind speed for loading and cross loading leeward slopes. I would expect to see newly formed wind slabs on top of sun crust or cold dry powder. These make for excellent sliding surfaces when overlaid by a dense, thick wind slab.

We are still seeing point release slides on our warmer aspects isolated to rocky outcrops or under large cliff bans. With our forecasted temperatures to reach into the low 30s today, we could see natural avalanches occur in these areas.

Local Forecast: Our storm should be arriving tonight bring snow to most of eastern Idaho. The N.W.S. is forecasting 3" - 5" to fall by Thursday morning, with an additional 1" -2" on Thursday. We can expect unsettled weather for the next few days.

Ridgetop winds: 10-20 mph out of the southeast

10,000ft temps: max: 30s min: 13-20 snow: none

Valley floor: max temp: 35 min: 15-20 snow: none

Titus Ridge at 10,000ft:

7AM Temperature: 18 Max: 23

Winds: Currently: 33 S.E. Max gust: 45 S.E.

Galena Summit at 8,800ft:

Total depth: 35"

storm interval #6

Bald Mtn. At 9000ft:

7am Temperature: 21

Winds currently: 20 S.E. max gust: 38 S.E.

Total depth: 38"

Valley Floor at 5800ft reports:

7am Temperature: 20 max temp: 41

Total Depth: 17"

TIP FOR THE DAY: The warmer aspects have crusted up so look for the more northerly aspects for good turning today. Also make a note of your favorite play grounds snow surface today - it will help you decide weather to ski it or not after the next storm!

UPCOMING AVALANCHE CLASSES:

A snowmachiner oriented basic avalanche class will be at Hailey Elementary Tuesday January 30th from 6-9 pm. Spread the word! The Friends of the Sun Valley Avalanche Center, who support the center, suggest a class donation of \$10 adult/\$5 student
Beacon Clinics sponsored by Backwoods each Thursday at 3pm next to the New Smith Building.

Any and all snow and weather observations are very helpful to us. Please call our observer hotline at 622-0099 if you do get out today.

An important announcement: for safety consideration, Bald Mountain is closed to all public access on avalanche control mornings. Violators are subject to prosecution by Blaine County.

This forecast and lots of great avalanche information is available daily on the internet at www.avalanche.org and www.csac.org. To subscribe to a daily e-mail service of this advisory, go through csac.org.

This forecast only applies to the backcountry and it is based on a limited number of observations in specific locations.

END

START

Forest Service Sun Valley Avalanche Center

Thanks for calling, this is Janet Kellam with the Forest Service Sun Valley Avalanche Center with an update to our spring snow and avalanche information

CONDITIONS: Monday, April 9th a large, deep slab avalanche was triggered in the northwest bowl of Galena Peak. It was triggered from below, after one person had skied the steeper slope and was pretty far out on the lower angle part of the basin. No one was seriously injured but they were caught in the slide, came out on top, and are very lucky.

This avalanche is quite representative of the conditions that we have on cooler aspects at mid to upper elevations. Our recent snow and wind has created an additional load on the snowpack. Don't let the conditions around town fool you we have received approximately a foot of new snow over the weekend in the Galena area and significant winds.

This spring, we have an unusual condition at mid to upper elevations on northerly aspects and in shady locations in which the underlying snowpack remains weak and non cohesive. This is not going to improve for a long time, maybe until the snow melts. Pay close attention to slope angles- slopes steeper than approximately 35 degrees will be suspect. In areas with this sugary snow condition, this instability may be reactivated whenever we experience weather changes like heavy snowfall, a marked warm up or additional wind transported snow. It will be difficult to predict just when and where a slope may avalanche and the slide may become quite large. It may be possible to trigger this type of deep slab slide from below or beside a steeper slope, or with the weight of a smaller surface avalanche. We continue to recommend safe travel practices such as one person on a slope at a time, closely watch each other, carry avalanche beacons, probes and shovels and be well versed with using them.

Some additional information:

Any new snowfall will initially be sensitive to the spring sun and warm temperatures and will be prone to sluffing and sliding on the steeper slopes. Any new snow accumulation will fall onto a variety of snow surfaces. The warmer aspects will tend to have slick sun crusts and the new snow may not bond well. The cooler aspects have an existing surface layer of light dry snow. Any heavy, new wet snow will be prone to sliding on the steeper slopes.

Mid to upper elevations have some wind slabs that lie on top of weaker Snow or crusts. These may crack and slide.

Watch for solid overnight freezes and daytime heating- when the snow becomes ankle deep mush or you are punching through moist crusts, the stability is decreasing and there will be an increased danger of wet slides. That is the time to get off of steeper slopes or out from beneath them.

Any field observations continue to be extremely helpful to us. Please call the observation voice mail at 622-0099 and leave a message about what you may be seeing out there, especially if you see or trigger any avalanches.

To help plan your spring outings with overnight temperatures and weather Forecasts You can link directly to daily Baldy, Titus, SNOTEL and National Weather Service information from our home page: the Sun Valley site on www.avalanche.org. Or check out this current advisory page on the internet for addresses.

Useful snow and weather Internet Sites Spring 2001:

Note- Titus and Baldy info will become unavailable in the off-season

Titus Weather Station

<http://www.sunvalley.com/weather/titus.txt>

Bald Mtn. Weather Station

<http://www.sunvalley.com/weather/sv2.txt>

Sun Valley area Fast Weather

<http://www.wrh.noaa.gov/TotalForecast/Pocatello/ID031.html>

Idaho SNOTEL sites (includes local information sites like Galena Summit)

<http://idsnow.id.nrcs.usda.gov/snow/recreation.html>

Galena Summit SNOTEL data

<http://nimbo.wrh.noaa.gov/cgi-bin/Missoula/msoobs?site=GLSI1&type=3&src=rgl>

This forecast only applies to the backcountry, not developed ski areas.

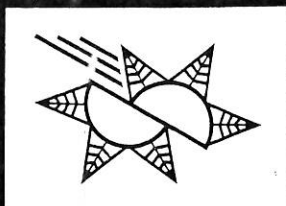
Thanks for calling this general information will be updated as conditions warrant.

END

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☐ Yes, I would like to attend the Snow Ball. Please reserve _____ tickets at \$12 each.
(All advance tickets will be held at the door.)

☐ Yes, I would like to purchase _____ raffle tickets at \$5 each, or 5 for \$20.
I am returning payment for the raffle tickets and the enclosed ticket stub(s) with
my name and phone number. (You need not be present to win.)

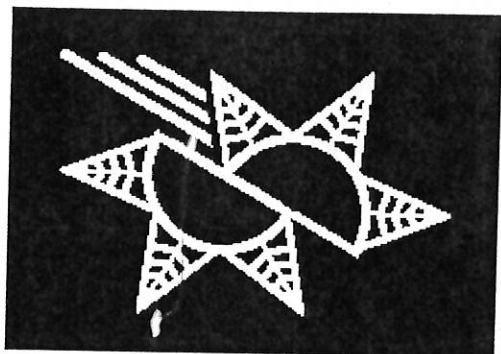
☐ Yes, I would like to make an additional donation to support the Sun Valley
Avalanche Center.

☐ I will not be able to attend, but would like to make a donation.



GRAND
TOTAL:

Name _____ Address _____ Phone _____



SUN VALLEY AVALANCHE C E N T E R



2001
Friends
Newsletter

THE DEBUT NEWSLETTER

The Debut Newsletter. The Friends of the Sun Valley Avalanche Center are pleased to announce the first annual Friends Newsletter. Friends of the Sun Valley Avalanche Center was created as a project of the non-profit Environmental Resource Center to enable fundraising programs and to encourage community participation in avalanche awareness. Friends Committee members meet regularly to plan fundraisers and awareness programs. Committee Members are: Sara Berquist, Tom Campion, Dennis Davis, Mark and Martha Deffe, Butch Harper, Rob King, Michael Kraynick, Michael Malko, Nancy Monk, Nils Ribí, and Steve Wolper. James Kennedy assists as a legal advisor. If you are interested in learning more about the Friends, or in participating on the committee, please contact Michael Malko at Backwoods (726-8818).

GO SURFING!

Some of our favorite websites:

- www.avalanche.org

National Avalanche Center backcountry tour (via [avalanche.org](http://www.avalanche.org)) weather sites:

- <http://www.boi.noaa.gov/Fast/fastID31.html>

Baldy/Titus telemetry:

- <http://www.sunvalley.com/weather/titus.txt>
- <http://www.sunvalley.com/weather/sv2.txt>

SNOTEL:

- <http://idsnow.id.nrcs.usda.gov/snow/snotel.htm>
- <http://idsnow.id.nrcs.usda.gov/snow/recreation.html>

Missoula Regional Map: data sites in the Intermountain West:

- <http://nimbo.wrh.noaa.gov/Missoula/nwsomso.sfcrgl.html>

Perfect Timing

- It takes approximately 10 minutes to perform a complete Rutschblock Test. ensure that everyone's beacon is working properly.
- It takes between 30 seconds and 1 minute to perform a simple shovel shear test. • 5-15 minutes will allow for a valuable beacon practice in the parking lot.
- It takes between 1 and 5 seconds to perform ski pole tests on your way up. • The average human can dial the seven-digit hotline number (622-8027) in approximately 2.225 seconds.
- 30 seconds in the parking lot will • All of these things can help prevent accidents and save lives!

Titus Weather Station

Currently the Titus weather station provides hourly temperature, relative humidity, wind speed, and wind direction data, available on the Sun Valley Avalanche Center web page. Friends of the SVAC are undertaking plans to help improve the Titus Station. This includes a snow depth sensor which would record hourly data on the web page. This additional data would provide us with a more complete picture of current weather situations in the Galena area and would improve forecasting. The new site would be located just below the current Titus site to avoid inaccurate snow depth records due to the site's current ridge top location. The "upper" station would still be used. Both stations would provide individual temperature, humidity, and wind observations. Currently, the only snow depth information available for the Galena area is the information recorded by the Galena Summit snotel sight. While this information is valuable, observations are currently only available on a 3-4 hour time delay.

The approximate cost for the necessary hardware and software and for a technician to install these new devices is \$7,000. The Friends of the Sun Valley Avalanche Center hope to raise this money and install the improved weather station by next season.



Learn the Lingo

In Mexico there are *baños*, *cervezas*, and *playas*. In Paris they talk of *fromage*, *escargot*, and *Napoleon*. In China they have an entirely different alphabet. If you are traveling in these places it can be helpful to be familiar with these things. Similarly, if you are traveling in the backcountry there is some vocabulary that is good to be familiar with and fun to throw around at cocktail parties.

aspect - the direction toward which an (avalanche) slope faces. Slope aspects are especially important when considering the effects of solar radiation or wind loading on the snowpack.

creep - the slow, continuous, glacier-like downhill deformation of the

snow cover, as a result of gravity-induced internal snow motion. This does not include the downhill motion of the snow cover relative to the ground, which is called *glide*.

depth hoar - end product of kinetic metamorphism: large, weak, cohesionless grains with facets.

runout - the bottom boundary of an avalanche path.

slab avalanche - an avalanche which occurs when one or more layers of snow break away as a unit. Most avalanches triggered in the backcountry are slab avalanches. Other types of avalanches include loose snow slides, cornice collapses, and ice avalanches.

sluffing - the progressive stabilization of steep snow slopes by small, usually harmless slab or point release avalanches.

snowbursts - very intense showers of snow, often of short duration, that greatly restrict visibility and produce periods of rapid snow accumulation.

supercooled - the condition when a liquid remains in the liquid state even through its temperature is below its freezing point.

surface hoar - frozen dew.

track - that part of an avalanche path between the starting zone at the top and the runout zone at the bottom.

S n o w M e t a m o r p h i s m

Snow metamorphism is the concise, multi-syllabic, textbook way of saying "changes in the snowpack over time." While the principles behind snow metamorphism are relatively basic, the consequences can be great. Slab avalanche potential increases when a great discrepancy exists between the cohesiveness of two adjacent layers of snow. That is, it is more important to determine the relative cohesiveness of layers than simply weather layers are "strong" or "weak".

There are three main types of snow metamorphism: equilibrium (rounded grains or rounds), kinetic growth (faceted grains or facets), and melt-freeze (MF or wet grains). The rate of change in any of these processes is directly related to the average snowpack temperature and the difference between temperatures at the top and the bottom of the snowpack (the warmer the temperature the faster the change).

When the temperature in a layer is constant or near constant, rounded grains develop. As the individual grains shrink and become round, bonds referred to as "necks" are formed between the grains. This process is known as sintering and strengthens a layer.

Faceted grains develop when there is a significant difference in temperature between layers. Kinetic growth forms large, weakly bonded angular grains of snow. This type of snow is often referred to as sugary or uncohesive snow. It is usually square-ish or feathery in shape (as with surface hoar). Buried layers of faceted snow, or depth hoar, are often the first layers to fail. Kinetic growth generally requires cold temperatures, highly porous snow, and/or a thin snowpack.

When temperatures reach 0 degrees Celsius (32 degrees F), as during mid-winter thaws or springtime, melt-freeze metamorphism can occur. This process is responsible for corn snow. Through repetitive melting and freezing (it's not just a fancy name), grains become coarser, larger, and more round. Frozen grains are strong and well bonded, but can still provide good solid, bed surfaces for slabs to form on. Melting grains are weak and lubricated with the presence of water. This process is what makes timing crucial when skiing slopes exposed to the sun late in the season.





OUR FORECASTERS

(From left to right)

- Dottie - super dog
- David Gordon - USFS Snow Ranger & Avalanche Forecaster FSSVAC
- Janet Kellam - Lead Forecaster
- Pat Deal - Forecaster FSSVAC
- Doug Abromeit - Director of FS National Avalanche Center
- Anne Marie Devereaux - Forecaster FSSVAC

The Human Factor



You've heard it a million times: most avalanches which catch humans are triggered by either the victim or someone in the victim's party. You have probably also heard that almost all avalanche accidents can be avoided if mother nature's clues are recognized and responsible decisions are made. Here are a few basic guidelines to remember when you are heading out into the backcountry.

1. Be prepared: Take an avalanche awareness class, call the avalanche hotline before you head out, study the terrain/snow, make smart decisions, always travel with a partner, carry rescue gear and know how to use it (practice often!).

2. One at a Time: Travel one at a time and make sure you wait in a safe place at the bottom. Several people spread out all over a slope at once are more likely to hit a trigger point than one person. Also, the greater weight of several people at once are more likely to overload weak layers than the weight of a single skier/climber/snowmobiler. When you are traversing across a slope, cross one at a time and stay in or near

the previous traveler's tracks. This again minimizes exposure and reduces the chances of hitting a trigger point. It is also a good idea to figure-8 or spoon tracks on the way down.

3. Never Cross Above Your Partner: If an avalanche is triggered the chances are that both of you will be buried, leaving no one to perform the rescue.

4. Plan an Escape Route: This could include grabbing a rock or tree (if you are in a safe place), or getting off of the slab. (Snowmobilers should continue in the direction they are headed and try to take advantage of their speed and momentum by getting out of the the slide path as fast as possible. Skiers and snowboarders should head downhill and out of the slide path at a 45 degree angle).

5. Never wear pole straps: Pole straps and safety straps can turn skis and poles into anchors in an avalanche. Large, heavy overnight packs can also have an anchoring effect. Conversely, small packs can serve as flotation devices and can also provide extra padding to the spine, kidneys, and other internal organs.

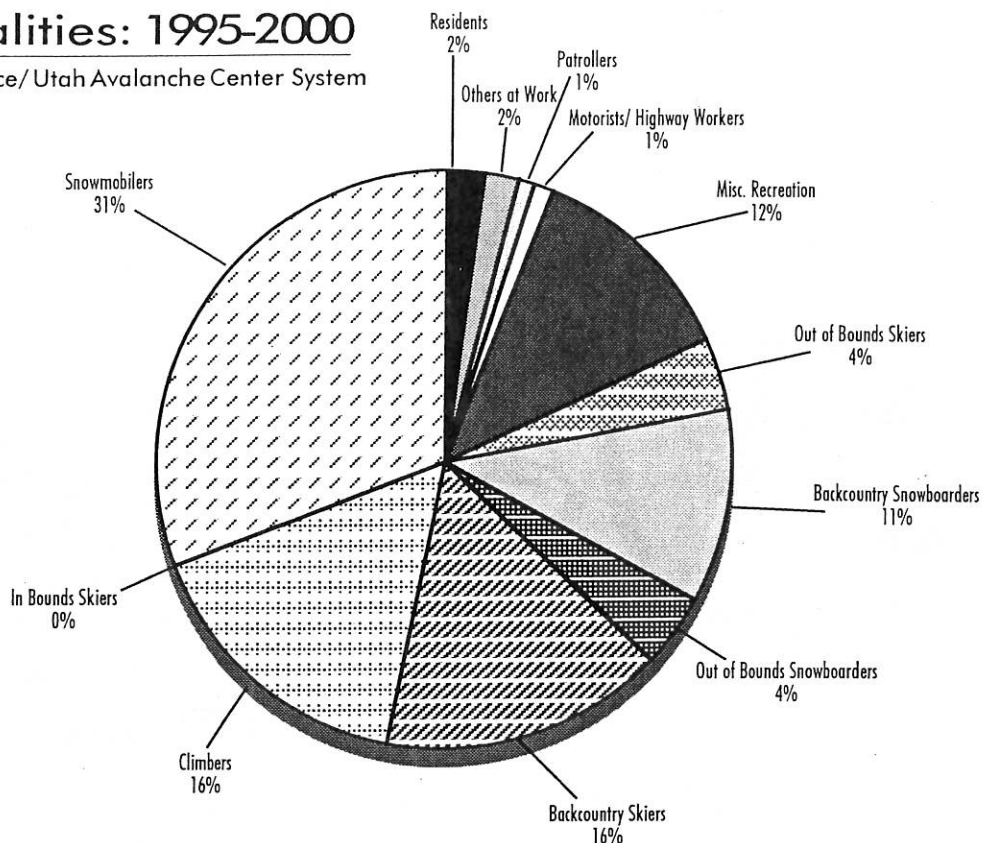
6. Cross the Avalanche Path High: Statistics show that those caught closer to the crown of a slide have a better chance of getting out of the slide than those caught farther down. Additionally, grabbing rocks or trees on a high cross can be an asset since anchors are generally on the "good" side of the fracture line.

7. MAKE SMART, RESPONSIBLE DECISIONS: The human factor is one of the most dangerous ingredients in nearly all avalanche accidents. Ego, poor planning, tunnel vision, peer pressure, haste, indecision, lack of preparation, and overall carelessness are just some of the human factors which help accelerate avalanche hazard. Don't let these things take control. Be smart when traveling in the backcountry and make responsible decisions. Remember, most avalanche accidents are a matter of "choice, not chance."

In the words of the Doobie Brothers: "What a fool believes, he sees. A wise man has the power, To reason away, What seems to be."

U.S. Avalanche Fatalities: 1995-2000

by Bruce Tremper, Director of Forest Service/Utah Avalanche Center System



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CHALLIS, IDAHO 83226

V. 119, #48 • THURSDAY, JANUARY 11, 2001

Avalanche awareness class offered January 17 in Challis

An avalanche awareness class will be offered Wednesday, January 17 from 7:00 to 10:00 p.m. at the Yankee Fork Interpretive Center in Challis.

This winter has been a particularly bad season for avalanche conditions. There have been some tragic accidents and very serious close calls. This class will help to cover the basics of why we have such a long-term instability of the snowpack, and how you can travel safely in avalanche terrain. Ninety-five percent of all avalanche victims are caught in a slide that they or a member of their party triggers. There are ways to understand the avalanche danger and avoid this.

Avalanche instructors will offer useful information for anyone interested in getting into the backcountry during the winter time: especially snowmachiners, skiers, snowboarders and snowshoers.

Topics covered include the elements of safe winter travel in the backcountry, what makes up avalanche terrain, the dynamics of snow and what factors influence the development

of avalanche conditions. Part of the session will cover what to do if you or your partners are caught. Instructors will be Janet Kellam and Patrick Deal, professional avalanche forecasters from the Forest Service Sun Valley Avalanche Center.

This class is co-sponsored by the Salmon-Challis National Forest and the Forest Service Sun Valley Avalanche Center. No sign up is necessary and it is free to the public.

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Avalanche danger will rise

New snow poses danger

By GREG STAHL

Express Staff Writer

There have been four avalanche fatalities in North America so far this fall and winter. Three occurred in Wyoming and one in Alaska.

A second avalanche fatality occurred at Teton Pass near Jackson, Wyo., last weekend, following a death the previous week.

Doug Abromeit, director of the U.S. Forest Service National Avalanche Center, based in Ketchum, said the avalanche conditions on Teton Pass are very similar to what will exist in the Wood River Valley and Stanley Basin as soon as it snows again.

"The entire West has similar conditions right now," he said. "What we have out there now is basically this homogenous snowpack. It's nothing but loose, sugary snow."

Abromeit said the local conditions aren't a hazard as they exist, but as soon as more snow falls, the added weight will produce avalanches.

"As soon as we get some new snow on top of this loose, sugary snow, it's basically like putting a brick on top of loose potato chips," he said.

The sugary snow that abounds is the result of a thin snowpack exposed to cold air on one side and the warmer ground on the other. The resulting temperature gradient helps transform snow flakes into rounder, cup-shaped ice crystals, which don't easily

bond with one another.

"If there isn't much snow, and it's cold, this is what we get," he said.

With new snowfall, forecast to occur this week, north faces and wind-loaded slopes will pose the most acute danger, Abromeit said, though conditions will likely be dangerous everywhere except where the older snowpack has melted off.

He advised people venturing out in the coming weeks to make decisions based on data collected during the outing.

"Be constantly gathering data and analyzing the stability of the snow. When people go out there, they shouldn't leave the door thinking they know what the stability of the snow is."

Furthermore, Abromeit said he is concerned that the lack of significant early-season snow will prompt locals to head to the hills in droves when it finally does snow again.

"A lot of people are jonesing to get out there, but they need to temper that with good judgment and good sense."

Before heading to the hills, check the Forest Service avalanche report at (<http://www.avalanche.org/~ciac/bulletin.txt>) or by calling 622-8027.

"If you don't have avalanche skills, stay on very low-angle slopes, 25 degrees or less. If you do have avalanche skills, don't take anything for granted. Err on the conservative side."

Forest Service Sun Valley Avalanche Center: Winter Operations

The Forest Service Sun Valley Avalanche Center has begun winter operations. The Avalanche Center provides a daily avalanche and mountain weather advisory on their hotline, 622-8027, as well as on their Website at www.avalanche.org. Avalanche classes and beacon clinics are scheduled for the season, and are posted around town or can be located through the Sun Valley Avalanche Center education page on the avalanche.org Website. Class dates are listed below.

Forecasters and instructors this season are Anne Marie Devereaux, Janet Kellam, David Gordon and Pat Deal. Doug Abromeit will fill in periodically, as the bulk of his work is focused on the National Avalanche Center. The National Avalanche Center is based out of Ketchum, Idaho, and Bozeman, Montana, and assists the network of Forest Service avalanche centers.

Check out the new National Avalanche Center Web pages, also located through www.avalanche.org. They include some excellent avalanche information as well as fun, interactive backcountry tours for skiers, snowboarders and snowmobilers.

UPCOMING AVALANCHE CLASSES

Avalanche classes will begin on Tuesday night, Dec. 5, at Hemingway Elementary School in Ketchum from 6-9 p.m. This first class is co-sponsored by the Blaine County Recreation District and the Sun Valley Avalanche Center.

No signup is necessary. Information covered will include what factors influence the development of avalanche conditions and the elements of safe winter travel in the backcountry.

This class contains information for anyone interested in getting into the backcountry during the wintertime, especially skiers, snowboarders, snowmobilers and snowshoers. Saturday, Dec. 9, will be the optional field session — details will be given out

during the evening class, and it is essential to attend a classroom session to be able to attend the field session. Call 622-5371 for more information.

For those that are unable to attend the December class, another Basic Avalanche Class will be offered Wednesday night, Jan. 10, 2001, from 6-9 p.m. at The Community School Middle School in Sun Valley. The all-day field session will be the following Saturday, Jan. 13, from 9 a.m. to 4 p.m. A snowmachiner-oriented avalanche class will be offered on Tuesday, Jan. 30 at Hailey Elementary School, also from 6-9 p.m. If there is enough interest, a day in the field with snowmachines will be offered on Saturday, Feb. 3.

Avalanche Beacon Clinics

On Monday, Jan. 15, from 6-8 p.m., the Avalanche Center will offer a snowmobilers avalanche beacon clinic at Woodside RV in Hailey.

Throughout the winter, Backwoods Mountain Sports will be offering a weekly 3 p.m. Thursday afternoon beacon practice next to the new Smith building in the Light Industrial Center in Ketchum.

The Forest Service Sun Valley Avalanche Center would not be able to operate without the help of the local "Friends of the Sun Valley Avalanche Center," the yearly hotline sponsors: Sturtevant's, The Elephant's Perch, Pro-Line, Woodside RV and Backwoods Mountain Sports.

Numerous local businesses, groups and individuals also contribute throughout the winter season. If you are interested in helping out the Avalanche Center with donations of time, money or assisting with fun, fundraising events, contact the Environmental Resource Center at 726-4333 or Michael Malko at 726-8818. Keep an eye out for the upcoming annual mail campaign, films, slide shows, raffles and events that the Friends group coordinates.

Avalanche Courses

The Galena Backcountry Ski Patrol (GBSP) will present National Ski Patrol-accredited 16-hour Basic (Level 1) and 32-hour Advanced (Level 2) Avalanche Courses for skiers, snowboarders, snowshoers and snowmobilers.

The Basic, Level 1, classroom session will be held Wednesday and Thursday, Dec. 6-7, 2000, from 6-10 p.m. at the Environmental Resource Center, located at 611 E. Leadville Ave., in Ketchum. The field session will be held Saturday, Dec. 9; meet at the Park & Ride lot in Ketchum at 8:30 a.m. to carpool to Galena Summit for all-

day course.

Fees will be \$30 for patrollers and \$75 for other participants.

The Advanced, Level 2, course will be held Monday through Thursday, Jan. 8-11, 2001, from 6-10 p.m. at the ERC in Ketchum. The field session will be overnight at the GBSP Fort at Galena Summit Saturday and Sunday, Jan. 13-14. Prerequisite is evidence of completion of a Level 1 course.

Fees will be \$50 for patrollers and \$100 for other participants.

Just show up, or call 727-1988, or visit alpine@micron.net with any questions.

SNOW REPORT

ALPINE

	New (24 hours)	Base	Summit	Comments (as of Wednesday)
Bogus Basin	0"	47"	52"	Skier packed and machine groomed; 342-2100
Brundage	0"	40"	60"	Packed powder; 1-208-634-SNOW; 1-888-ALLSNOW
Sun Valley	0"	35"	60"	Groomed runs; 1-800-635-4150
Pomerelle	1"	58"	82"	Powder; packed powder; 1-208-673-5555
Grand Targhee	3"	46"	86"	Tracked powder; 1-800-TARGHEE
Silver Mountain	0"	61"	64"	Firm packed; 1-208-783-1111
Schweitzer	0"	47"	56"	Groomed; 1-208-263-9562
Anthony Lakes	n/a	44"	56"	Groomed; 1-541-856-3277

NORDIC

	New (24 hours)	Base	Comments (as of Wednesday)
Ponderosa State Park	0"	24"	All trails groomed; 1-208-634-2164
Cascade	0"	21"	Crawford and Crown Point groomed; 1-208-382-4258
Little Ski Hill	0"	18"	Groomed; 1-208-634-5691
McCall Trails (Golf Course)	0"	24"	Trails expected to be groomed for weekend; for update, 1-208-634-3006
Bogus Basin	0"	47"	All trails groomed; 332-5390
Banner/Gold Fk./Whoop	0"	48"	Trails groomed; 334-4108, Ext. 403
North Valley Trails	0"	12-14"	North Fork, Harriman trail groomed; 1-208-726-6662
Galena	0"	25"	All trails groomed; 1-208-726-4010
Stanley area	.5"	12-48"	16K groomed at Park Creek and 10K at Alturas; 1-208-726-6662
Sun Valley Nordic	0"	18"	All trails groomed; 1-208-622-2250

SNOWMOBILING

	New (24 hours)	Base	Comments (as of Wednesday)
McCall area	0"	20-54"	Warren Wagon; Granite Lake groomed; 1-208-634-0427
Cascade area/Smiths Ferry	0"	10-40"	All trails groomed; 1-208-382-6712
Garden Valley	0"	24-48"	All trails groomed except Packer John, W.F., Howell Cr.; 1-208-382-4464
Idaho City area	0"	12-48"	All trails groomed
Stanley area	0"	12-48"	No report
Pine/Featherville	0"	15-51"	All trails are groomed; 1-208-653-2222
AVAILANCHE HOTLINE (MCCALL)			
1-208-634-0409 www.fs.fed.us/r4/payette/main.html			
AVAILANCHE HOTLINE (SUN VALLEY)			
1-208-622-8027; www.avalanche.org			

BOISE
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 "OUTDOORS"
 Nov 30 / 2001



AVAILANCHE ADVISORIES AVAILABLE VIA PHONE, NET

The U.S. Forest Service Sun Valley Avalanche Center is providing daily avalanche and mountain weather advisories on its hotline. Call 1-208-622-8027 or surf over to www.avalanche.org.

The Web site has avalanche information as well as fun, interactive backcountry tours for skiers, board-

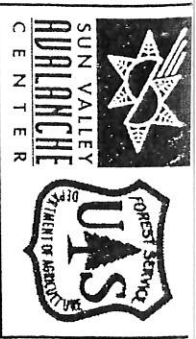
ers and snowmobilers.

Avalanche classes are starting. class is 6-9 p.m., Dec. 5, at Hemingway Elementary School in Ketchikan.

A field session is planned Dec. 6. The location will be announced during the classroom session.

Call 1-208-622-5371 for information.

New this season AC #'s in WEEKLY OUTDOOR SECTION DURING WINTER



SNOW SAVVY

EVOLUTION OF A SNOW GEEK

BY: JESSICA WASILEWSKI
Sun Valley Avalanche Center/US Forest Service

I spent the month of January working as an intern at the US Forest Service Sun Valley Avalanche Center studying snow.

Like most people around here I've always been a lover of snow and all it is responsible for: skiing, sledging, snowshoeing, snowballs, snowmen, snow angels, hot chocolate...My heart beats faster each time it snows, my eyes uncontrollably widen and I still try to catch the flakes on my tongue.

Spending time outside has taught me that snow is not always the same. Flakes can be big or small, wet or dry, sharp or round. Some make great snowballs; others leave you defenseless. Some snow is light and fluffy, some leads you to bribe your brother into shoveling the walkway. However, until this month I never truly realized how variable snow crystals could be, why they could be so different, or what the real implications of these differences were.

THE WOOD RIVER JOURNAL SPORTS SECTION

EDITOR: PHILIP A. JANQUART, 788-3444

INSIDE: WINTER REPORT, SCORES AND MORE

Avalanche Hotline:
622-8027
WWW.avalanche.org

The science of snow and avalanches is a cross between physics, chemistry, and building a snow fort. It is as fascinating and intricate as all three arts combined and comes complete with its own principles, its own lingo, and its own geeks.

Like a ski bum with a pocket protector, the snow geek is the computer nerd of the backcountry, they are who you want to know. The only difference is that you are more likely to find their head in a snow pit (official lingo for "hole in snow") than in a book or at a computer. While chemists blow things up, and physicists make things move, snow geeks blow things up, see if they will move, and dig pits. As with any science there are special names for these pits and tests, like the Rutschblock (elusive, fancy,

SAVVY, from page 1

German), the shovel shear (practical, to the point), the pole (simple, easy to learn) and the banzai jump test (fun name, no one can reject it, temporarily makes you the heroine of the backcountry). Unlike most of these other sciences it IS a good idea to try these things at home.

It was one afternoon, while taking the above to the extreme by literally digging a pit in my backyard that it hit me: I was becoming a snow geek.

Not only can I tell you what kind of snow crystals are in my backyard, what kind were there yesterday, and the slope of both mine and my neighbors roofs, but I can also tell you the implications of these things, the most stable angle at which crystals bond, and what rinning is.

I can tell you the difference between surface hoar, depth hoar, square crystals, graupel, and crapy snow (all technical terms coined by avalanche professionals), and I pack my macro lens and pit book as quickly as my ski boots, beacon and shovel. At dinner I bring up things like the size of the depth hoar I saw that day and the previ-

ous night's wind loading.

But it goes beyond a fancy vocabulary and a backyard full of pits. The snow geek has poor posture from constantly crouching over the steering wheel and looking for wind loading, natural slides, and where the best tracks will be.

He not only has the strong legs of a skier but also has the strong arms of a digger, and his teeth are coffee stained from trying to wake up at 4 a.m. to get the day's avalanche advisory out on time.

I am not suggesting that you hurriedly start digging pits in your backyard, nor am I suggesting that it is necessary to know exactly the different types of snow.

What I am suggesting is that you DO try this at home in our bigger "backyard", get to know the snow, get your hands in it, begin to pay attention to what is going on in the snow pack. Digging and knowing how to interpret a pit can not only tell you where the best skiing will be, but could potentially save your life. Who knows- you may even get hooked!



Snow Savvy

Avalanche Myths

BY ANNE MARIE DEVEREAUX
Sun Valley Avalanche Center - U.S.
Forest Service

I have a favorite "Farside" cartoon that depicts a man on skis cautiously approaching a gully between two steep slopes marked by a sign that reads "Avalanche Danger". At the far end of the gully is a marching band with clanging cymbals and banging drums walking right beneath the slopes. This cartoon makes me laugh every time I see it, but it is not accurate (I am sure I will be hearing from Gary Larson). Avalanches cannot be triggered by sound, whether it is a marching band or a sonic boom or someone sneezing. And there are quite a few myths about avalanches that merit discussion so I will try to dispel a few here.

AVALANCHE
HOTLINE: 622-8027
www.avalanche.org

TRACKS — "The slope had tons of tracks on it so I thought it was safe." This is a common trap people can fall into. Don't get me wrong; skier compaction is a viable way to make slopes safe. Ski areas around the world rely on and use skier compaction to stabilize the snow throughout the winter season. However the backcountry is different from ski areas, and it is rare for backcountry slopes to see enough traffic to be considered "skier compacted". So don't let tracks, whether put down by snowmachines, skiers, boarders or snowshoers trick you into thinking a slope is safe. Look at the data you have gathered about the slope and make your own decisions.

TENSION — A person approaches a slope and notices a crack in the snow shoot out from their ski and run across the slope. The snow slides a few inches and stops. The person announces that "the slope is now safe because the tension has been released from it". Don't believe it! A shooting crack is a billboard from mother nature telling you that the snow is unstable. It is one of

See **Avalanche**, page 7

C7

AVALANCHE, from page 1

Wood River Journal SPORT

the sure signs of instability that you should pay close attention to if you see it. It should cause you to evaluate your plan for the day.

FAMILIARITY "I have been coming to this slope for 15 years and NEVER seen it slide". Complacency can be very dangerous in avalanche terrain. Regardless of how many times you have skied or sledged a slope you should be heads up and ask yourself these questions: Is the slope steep enough to slide? Could the snow slide? Is the weather affecting the snow's stability? Base your decision on your answers to these questions, not on the fact that you have never seen it slide before.

THE SNOW HAS DRIED OUT "We tried to ski this slope a week ago and it was heavy and impossible and now the snow has dried out and the skiing is great!" The description of this phenomenon does occur, but the terms "drying out" are not accurate. The actual water content in the snow is the same, but the shape of the snow crystals has changed. What has occurred is that when the snow was heavy and hard to ski the crystals were most likely beginning to round off and bond together—a good process. In the meantime, clear, cold and dry weather conditions reversed this process and caused the snow crystals to become more square than round, or become "faceted" as Janet discussed in last week's column. These faceted crystals are usually poorly bonded to each other and loose, thus the feeling of "dry" snow. This "recycled powder" can stick around for weeks and be a lot of fun. When it is sitting on top of other strong layers it is not a problem, but keep in mind that when new snow buries this faceted layer, it can become a buried weak layer.

SHALLOW SNOWPACK "There was only 18" of snow so we didn't think it could slide". There is no minimum depth of snow required for an avalanche. A good rule of thumb is that if there is enough snow to go out and goof around in, then there is enough snow to avalanche.

LOW TO MODERATE HAZARD "We called the avalanche advisory and they said the hazard was low to moderate so we did not think we could get caught." Low hazard means that natural avalanches are very unlikely and human triggered avalanches are unlikely. Moderate hazard means that natural avalanches are unlikely and that human triggered avalanches are possible. Nowhere does it say that avalanches are impossible. However, what is most important is that avalanche forecasts cover a large area and are not site specific. Conditions vary greatly from area to area as well as on a single slope. You must evaluate the terrain you want to play on.

Hopefully this has cleared up some of the more common avalanche myths. Next time you find yourself in one of these situations, think carefully and remember the myth.



Rotary Speaker

JANET & JESSICA

Thank You

We Appreciate
Your Presentation

Bob Hume

SECRETARY
KETCHUM - SUN VALLEY
ROTARY CLUB

Snow Ball a great success

Editor:

KETCHUM — The staff at the Forest Service Sun Valley Avalanche Center would like to extend an enormous thank you to everyone who helped make the Friends of the Avalanche Center Snow Ball such a great success.

Wally Huffman and the Sun Valley Company deserve a special thank you for their community spirit and all of the assistance that they gave the Friends group. Sun Valley very generously helped host the Snow Ball at River Run Lodge during the peak of a busy spring ski season, and a 2002 season ski pass was the grand raffle prize. Over \$8,000 was raised by the event to help support the operations of the avalanche center for next season.

The Sensational Toast Points, the Friends Avalanche Awareness Committee, Louise Stumph, Michael Malko, the ERC, Backwoods and The Elephant's Perch, Gary Stivers, Jytte and Rolfe, Life Link, Black Diamond, Marmot, Ortovox, Smith Sport Optics, Kelly O'Neill, and to all of you that assisted, we send a big thanks. It never would have happened if not for your enthusiasm and dedication. Those of you that helped support the avalanche center by attending the Snow Ball, thanks for joining us and having some fun for a good cause!

If you had a good time and you happen to run into any of the folks that helped put on the Snow Ball, give them a big smile and let them know. Not only is it one of the great gatherings of the spring, it was a real opportunity to promote avalanche awareness.

To all of you: Sun Valley Company, the local media, folks in the Wood River Valley and the Sawtooth Valley who have shown a great commitment and enthusiasm for the spread of avalanche information — a very warm thanks.

The Staff at the Forest Service
Sun Valley Avalanche Center

Sun Valley Avalanche Center offers classes, beacon clinics

The Times-News

KETCHUM — 'Tis the season for avalanches, and the U.S. Forest Service Sun Valley Avalanche Center is offering avalanche awareness classes.

This has been a particularly bad winter for avalanche conditions, said Janet Kellam, lead forecaster for the avalanche center. There have already been some fatal accidents, most of which were triggered by the victims or members of their party.

Avalanche awareness classes cover the basics of snowpack instability and provide insight into how people can travel safely in avalanche terrain. They are for

Avalanche Center.

- A classroom session is set for 7 to 10 p.m. Wednesday at the Yankee Fork Interpretive Center in Challis. No field session is planned.

- An avalanche beacon clinic for snowmachiners will be held from 6 to 8 p.m. Monday at the Woodside RV Center in Hailey.

No sign-up is necessary. Classes are sponsored by the Friends of the Sun Valley Avalanche Center, the U.S. Forest Service Sun Valley Avalanche Center and the Salmon-Challis National Forest.

For more information, call Kellam or Devereaux at (208) 622-5371.

More information

Daily avalanche forecasts are available on the Avalanche Hotline at (208) 622-8027. Avalanche Center web pages and advisories are found at www.avalanche.org.

anyone who ventures into the backcountry during winter — especially snowmachiners, skiers, snowboarders and snowshoers. Instructors will be Kellam, Anne Marie Devereaux and Patrick Deal, professional avalanche forecasters with the Sun Valley



Thanks to:

Patrick Deal

+

Anna Deveraux

Soldier Mountain Search and Rescue would like to thank you for your support.

Thanks to people like you, we can improve our Search and Rescue organization to better serve our community.

Search and Rescue Volunteers

*Thank you for the
Very Informative class
We All Appreciate your
Time + Effort.*

Box 77
Stanley, ID
83278



Avalanche Center
Ketchum Ranger Station
PO Box 2356
Ketchum ID,
83340

Wesley

Drake Jonathan

Nick Jerred

Quik James

Thank you so much
for your time and
effort. The kids
talked about the
class for days. I
think it really
impressed them!
Mayella

Molly

Alisha BR

Janet,
Thanks so much for
the avalanche awareness class.
I really appreciated the information.
Lisa Muscavage

Erick

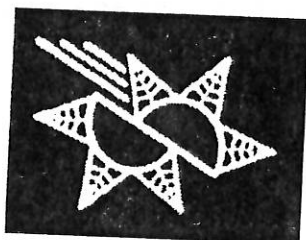
Driff

Matthew

Adam

Jessie KOL

Orson Addy
Michael



SUN VALLEY
AVALANCHE
CENTER

Our 2001 Fundraiser was a great success!
Many thanks to everyone who made this happen!

The Sensational Toast Points
 (and they were!)

Wally Huffman
 & The Sun Valley Co.

Louise Stumph
 The Enviromental
 Resource Center, Molly & Melissa

Backwoods Mountain Sports
 The Elephant's Perch
 Ketchum Ranger District
 Gary Stivers & KECH Radio
 Wood River Journal & Phil Janquart
 Idaho Mtn. Express

Friends of Sun Valley Avalanche
 Center Especially:

Michael & Nancy Malko
 Nils Ribí & Patti Brolin
 Rob King
 Sarah Berquist
 Martha Deffe
 Margaret Deal
 Jay Gress
 Steve Wolper
 Steve Butler
 Chris Gardner
 Joel Mallett
 Amanda Breen
 Andy Munter

And many thanks also to:

Vests of the West/Kelly O'Neill
 Jytte Mau Designs/Jytte & Rolfe
 Smith Sport Optics/Tag Kleiner
 Ortovox USA/Marcus Peterson
 Nike/Peter Stuart
 Life Link International

Black Diamond/Mike Kurilich
 Marmot/Dana Sterling and Yukon
 Trading Co.
 Mother Nature for her spectacular
 Northern Lights display!



**Forest Service Avalanche Centers
& Links to all kinds of avalanche information:**
www.avalanche.org

Forest Service National Avalanche Center Interactive Tutorial:
www.fsavalanche.org

USEFUL INTERNET SITES FOR SNOW & WEATHER

Weather

<http://www.boi.noaa.gov/>
<http://www.wrh.noaa.gov/Pocatello/> (great links to satellite and radar maps)
<http://www.wrh.noaa.gov/TotalForecast/Pocatello/ID031.html> (Wood River Valley)
<http://www.wrh.noaa.gov/cgi-bin/wrhq/getCoords.pl> (Sawtooth Valley)
<http://www.weather.unisys.com/>
<http://www.wrh.noaa.gov/Pocatello/avalanche/index.html>

Baldy/Titus (unavailable in off-season)

<http://www.sunvalley.com/weather/titus.txt>
<http://www.sunvalley.com/weather/sv2.txt>
<http://www.sunvalley.com/weather/sv.txt>

Utah Mesonet

<http://www.met.utah.edu/jhorel/html/mesonet/data.html>
http://www.met.utah.edu/cgi-bin/devvel/meso_station.cgi?area=1
<http://www.met.utah.edu/cgi-bin/devvel/time.cgi?stn=SVT>

SNOTEL

<http://idsnow.id.nrcs.usda.gov/snow/snotel.htm>
<http://idsnow.id.nrcs.usda.gov/snow/>
<http://idsnow.id.nrcs.usda.gov/snow/recreation.html>

Missoula Regional Map for Reporting Sites: RAWS, SNOTEL, airports etc.
<http://nimbo.wrh.noaa.gov/Missoula/nwsomso.sfcrgl.html>

FOREST SERVICE AVALANCHE FORECAST CENTER LIST

For the latest Avalanche Information and Mountain Weather Forecast:

FOREST SERVICE UTAH AVALANCHE CENTER-SALT LAKE CITY

Hotline: Sundance/Timpanogos (Provo) (801)378-4333

Tri-Canyon (Salt Lake City) (801)364-1581

Alta (801)742-0830

Park City Area (435)658-5512

Ogden Area (801)626-8600

Snowmobile Hotline: 1-800-648-7433

Web-site: <http://www.avalanche.org/~uafc/index.phtml>

FSUAC/ BEAR RIVER AVALANCHE CENTER-LOGAN

Hotline: (435) 797-4146 Logan

(208) 239-7650 Southeast Idaho

Web-site: <http://www.usu.edu/~uafclogn/>

FSUAC/ MANTI-LA SAL AVALANCHE CENTER-MOAB

Hotline: (801) 259-SNOW

Manti-SkyLine Hotline: 1-800-648-7433

Web-site: <http://www.avalanche.org/~lsafc>

NORTHWEST WEATHER AND AVALANCHE CENTER

Hotline: Washington (206) 526-6677 Oregon (503) 808-2400

Web-site: <http://www.nwac.noaa.gov>

COLORADO AVALANCHE INFORMATION CENTER

Hotline: Denver/Boulder (303)275-5360

Fort Collins (970)482-0457

Summit County (970)668-0600

Colorado Springs (719)520-0020

Vail (970)827-5687

Aspen (970)920-1664

Durango (970)247-8187

Web-site: <http://www.caic.state.co.us/>

GALLATIN NATIONAL FOREST AVALANCHE CENTER

Hotline: Bozeman, Livingston & West Yellowstone (406) 587-6981

Cooke City (406) 838-2259

Website: <http://www.mtavalanche.com>

NORTH WESTERN MONTANA GLACIER COUNTRY AVALANCHE CENTER

Hotline: (406) 257-8402

Website: <http://www.montanaweb.com/avalanche>

MISSOULA REGIONAL AVALANCHE FORECAST CENTER- WEST CENTRAL MONTANA

Hotline: (406) 549-4488

Web-site: <http://www.fs.fed.us/r1/lolo/rec-contrib/advisory.htm>

FOREST SERVICE SUN VALLEY AVALANCHE CENTER

Hotline: (208) 622-8027

Web-site: <http://www.avalanche.org/~svavctr>

PAYETTE NATIONAL FOREST AVALANCHE INFORMATION CENTER

Avalanche Information: (208) 634-0409

Web-site: <http://www.fs.fed.us/r4/payette/main.html>

IDAHO PANHANDLE

Avalanche Information: (208) 765-7323, (208) 752-1221

BRIDGER-TETON NATIONAL FOREST AVALANCHE CENTER

Hotline: (307) 733-2664

Web site: <http://www.untracked.com/forecast/>

TAHOE NATIONAL FOREST AVALANCHE CENTER

Hotline: (530) 587-2158

Web-site: <http://www.r5.pswfs.gov/tahoe/avalanche.html>

SHASTA-TRINITY NATIONAL FOREST AVALANCHE CENTER

Hotline: (530) 926-9613

Web-site: <http://www.r5.fs.fed.us/shastatrinity/mtshasta>

MOUNT WASHINGTON, NEW HAMPSHIRE

Web-site: <http://www.tuckerman.org>

Daily postings are at Pinkham Notch Visitor Center, Tuckerman Ravine and Huntington Ravine

NORTH AMERICAN AVALANCHE WEBSITES:

WESTWIDE AVALANCHE NETWORK www.avalanche.org

CANADIAN AVALANCHE ASSOCIATION www.avalanche.ca

FOREST SERVICE NATIONAL AVALANCHE CENTER www.fsavalanche.org