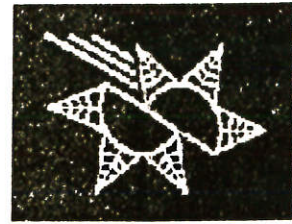


SUN VALLEY AVALANCHE CENTER



**CURRENT AVALANCHE
ADVISORY**

EDUCATION

LOCAL INFORMATION

LINKS

BALDY WEATHER

TITUS WEATHER



Advisory - Education - Local - Links - Baldy - Titus

Daily Avalanche Advisory Hotline: (208)622-8027
To call in snow and weather observations: (208)622-0099



1999-2000 Annual Report

Prepared by
Anne Marie Deveraux
Janet Kellam
Forest Service Sun Valley Avalanche Center
Ketchum Ranger District
PO Box 2356
Ketchum, ID 83340
(208) 622-5371
svavctr@sunvalley.net

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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.

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 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 Apshaga Deffe** 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** 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 generous 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.

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 new website for the 1999-2000 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** designed and installed our new website in the early summer of 1999. **Leland Bruns**, the PC Wizard , assisted us in computer reorganization and continues to provide invaluable services.

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.

The **Galena Backcountry Ski Patrol** contributed funds along with **Blaine County Rec District** raffling off a North Valley Trails season pass and hosting the public December Avalanche Awareness class. GBSP Members were also active in reporting observations and snow study data.

Backwoods Mtn Sports, Sturtevant's, and The Elephants Perch were joined by new hotline sponsors- **ProLine Sports** and **Woodside RV**.

Smith Sport Optics provided equipment for forecasters and regular observers.

Patagonia provided 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 **National Forest Foundation** provided a \$5,000 matching grant for funds raised by the Friends of SVAC.

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.

OPERATIONS 1999-2000

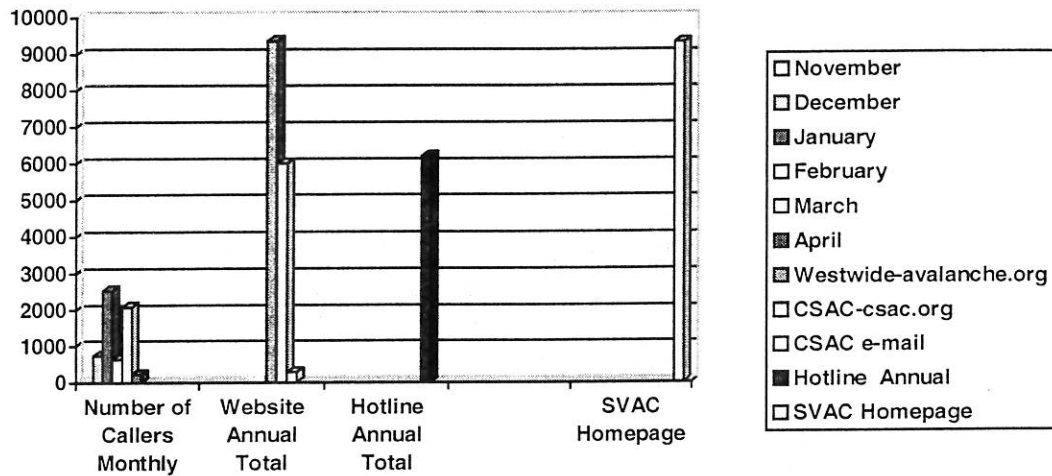
Hotline & Internet:

The Sun Valley Avalanche Center provided daily avalanche advisories and mountain weather forecasts from late November through early April. We posted week-end forecasts until late April, and then posted a summer page with helpful tips for spring travel in the backcountry.

The internet has made its mark on how people get their avalanche information. Use of the internet again increased with over 9,000 hits and e-mails. Many people commented that reading the forecast at home was their everyday routine. We also began e-mailing the forecast to Woodside RV and Proline Sports, our local snowmobile shops, and they posted the forecast in their shops daily. Paul Kenny's, a local ski shop received a daily fax of the advisory for their employees to better serve the public and their own skiing interests. The base of users we serve has increased via the internet as many out of area people use it for the safe travel and tip information. The hotline continues to be the preferred source of information for many people, with over 6200 calls, and many have commented that tone of voice conveys as much as words do, so the hotline will always be their choice.

We installed a new digital answering machine for the hotline and had a trouble free season. Prior to this season the machine was housed in Hailey and shared by many users and we could not manually access it to correct problems in the early morning. The Hotline sponsorship monies were able to cover the hotline operating expenses.

New for 2000-2001 will be the Forest Service National Avalanche Center web site. This will be an exciting new site at www.avalanche.org that will have links to centers throughout the west and Canada. The educational sites will include a basic safe travel tutorial, interactive backcountry touring, technical papers and research, and more. SVAC home page direct address will remain at www.avalanche.org/~svavctr/



NUMBER OF CALLS BY MONTH

	Hot Line	Internet Sites
NOVEMBER:	no snow	(monthly data not available)
DECEMBER:	739	
JANUARY:	2524	
FEBRUARY:	636 (little snow)	
MARCH:	2078	
APRIL:	216	

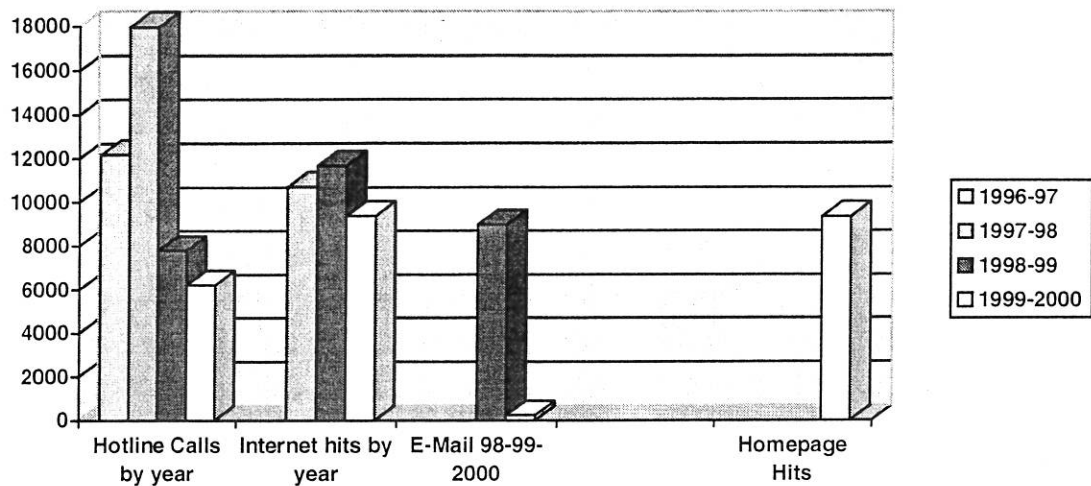
TOTAL NUMBER	Hotline	Westwide	CSAC	CSAC e-mail	SVAC Homepage
1999-2000	6193	9353	6,000	270	9319

Annual Number of Bulletin Accesses (EXCLUDING OBSERVER LINE)

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 1999-2000

This past season, internet access continued to increase. We did see a slight decrease in the number of phone calls to our hotline, as well as an overall lag in numbers. We feel that this was due to an extremely late start to the season (no real snow until January), an increased internet use, and long clear spells with little or no weather. CSAC, which is an independent provider, found it necessary to ask for a fee from those subscribing to their e-mail service. Thus the marked drop in bulletins e-mailed. Overall, we feel that we continue to see an increase in user numbers and avalanche center awareness by the general public each season.



AVALANCHE ADVISORY USE PATTERNS since 1996

YEAR	Hotline	Observer Line	Westwide	CSAC	CSAC e-mail
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	6193	unavailable	9,353	6,000	270 (fee charged)

Annual Number of Bulletin Accesses (EXCLUDING OBSERVER LINE)

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)



Accidents

In North America there were 30 avalanche fatalities, with an additional 45 people caught, and these are only the reported near misses. There were two separate fatal incidents in the eastern U.S., an area we don't always associate with avalanches.

In Idaho, there were two fatalities, one in the southeast portion of the state and the other in the northern portion. In our forecast area, while there were not any fatalities, there were several near misses, and we feel very lucky no one was seriously injured. One out of bounds skier on Baldy was caught by a fairly large slide while skiing alone, lost his equipment and hiked back to the ski area. He later told the owner of the local heli-ski operation that what saved him was the education he had received during the heli-ski briefings- he knew to swim hard for the top and he grabbed a tree mid-tumble.

Another group of regular Baldy out of bounds skiers witnessed a size III to IV avalanche that was triggered sympathetically from their first skier down the slope. Most of the group had beacons and shovels, but what saved them was their route selection. The skier was on a safe ridge adjacent to the slide path. They were fortunate that they triggered the slide, as the second party to follow their route entered the slope from the top of the slide path and boarded right over the fracture line.

Perhaps the most significant event of the winter occurred on January 28. Forecasters Janet Kellam and Anne Marie Devereaux, along with tour partner Kelly O'Neill, snowmobiled 11 miles out Baker Creek to investigate the snowpack after a report from Sun Valley Heli-ski of a slide triggered by a snowmobile earlier in the week. Janet was caught and buried by a small avalanche, but rescued by beacon search, conscious and uninjured, by Anne Marie and Kelly. (See attached article). The fortunate end results of this accident were the numerous discussions and awareness it raised. People that had not practiced with their beacons in years, practiced. Shovels that were stashed in pieces in packs were brought out and assembled. In short, people were shocked into thinking that if it could happen to these conservative women, it could happen to them.

Awareness and education have definitely made a difference in the choices people make in the backcountry in our forecast area. Hopefully, this trend will only continue to improve and expand.

Education

Winter 1999-2000 was busy for SVAC instructors. We started the season with three basic classroom and field sessions. Schedules were posted throughout the valley, and advertised on the radio, in the newspapers, and on our web page. We were able to take over the class in December that was previously put on by the Galena Backcountry Ski Patrol for Blaine County Recreation. Nearly 80 people attended this basic awareness class, and the Rec District donated and raffled off a nordic ski pass. The donations for tickets went to the center. The second class was over the Christmas holidays for students, and the last in January. We held three follow-up field sessions. Backwoods Mountain Sports again graciously offered students "Snow Bucks" for discounted avalanche related merchandise. We held a beacon clinic at a local snowmobile shop that was well attended, as well as a class with the Silver Creek Alternative School and the Girl Scouts. We also held a two day class for a visiting Elder Hostel group.

Backwoods Mountain Sports started offering weekly beacon instruction and rescue clinics. These were held every Thursday and despite frequent inclement weather, they were a success. Janet and Anne Marie also started writing a weekly education column, "Snow Savvy" in the local paper.

Outside of the Wood River Valley, we held a basic class in Twin Falls, and an awareness class in Stanley. Our staff traveled to Tahoe, Alta and Jackson Hole to assist with National Avalanche Center classroom and field sessions. We also taught at the National Outdoor Leadership School and the Alaska Mountain Safety Center.

Approximately 200 folks attended local classes. We received comments from many people about how much they have learned either from classes, our daily advisory, clinics and the newspaper. People have even complained about how much they miss our daily advisory and weather forecast once the snow melts!

Our goal at the center is to continue to find new ways to reach out to and educate all of the people who use the backcountry in winter. As technology changes gear and machines, greater numbers of people

are discovering the allure of winter travel. We want these people to know how to make good choices in avalanche terrain. We are looking at starting a junior high awareness program, in order to start kids off early on the right foot. Janet continues her work on the youth avalanche awareness box. Hopefully both of these programs will be able to reach out beyond the wood river valley in the future.

Our own education as instructors is important as well. The staff will be attending the year 2000 International Snow Science Workshop in Big Sky Montana. This event occurs every two years and is attended by avalanche professionals from all over the world.

Staff

Doug Abromeit, director of the National Avalanche Center and Winter Recreation Specialist for Ketchum Ranger District, continued to direct the Sun Valley Avalanche Center, as well as fundraising for all of the centers. Janet Kellam in her fourth season, worked as the lead forecaster. As with everything she does, Janet gave the center her best effort and we all benefited from it. Anne Marie Devereaux finished her second season with the center. Her part-time work with Sun Valley Heli-ski helps her get out to places that are inaccessible by foot, which benefits the centers forecasts. David Gordon, Ketchum Ranger District Snow Ranger continued to forecast one day a week. David has a gift with language and his forecasts are always succinct, thorough and thought provoking, which aids all of us in our own personal forecasting. We feel very fortunate to have a new staff member as well. Pat Deal came on board this year and was a great help with classes and forecasting. Pat was a professional Patroller and forecaster at Sugar Bowl in California, and he brought his avalanche dog, Skilak, to the staff as well. Pat's good nature and years of experience are a great addition to our staff.

Observer Network

We had a lot of enthusiasm from our observers in the early part of the season, but because the winter got off to such a slow start, the enthusiasm for reporting from our observers waned. However, throughout the season we did get reports of significant events from witnesses, shortly after the events occurred, so we were able to report on these events quickly and accurately. Smith Sport Optics again graciously donated some of their products for our staff and our observers, and this is greatly appreciated. We will continue to encourage people to call in their observations, no matter what they are, because all information is important when piecing together the avalanche puzzle.

Fundraising

The Avalanche Awareness Committee (AAC) is a group of citizens who have the dedication and enthusiasm to help support the center. Their mission statement is "The Avalanche Awareness Committee supports avalanche education and awareness in the Sun Valley area. In particular we encourage the community support for the independent operations of the Sun Valley Avalanche Center." They are an awesome group and professional in every aspect. We are extremely grateful for their work and support. 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.

Committee Members are: Sara Berquist, Tom Campion, Dennis Davis, Mark and Martha Deffe, Rob King, Michael Krainick, Butch Harper, Michael Malko, Nancy Monk, Nils Ribi and Steve Wolper. James Kennedy assists as a legal advisor. Many Thanks to you all!

Our fundraising events were very successful and well attended this season. The events included:

The Avalanche Center Snowball – The local and legendary band, The Sensational Toastpoints, again graciously donated their time, energy and talent to perform for our snowball. Sun Valley Co. discounted the rental price for the River Run Lodge, a beautiful venue for this event. They also discounted the price of a seasons pass, which was the grand prize in our raffle. Michael Malko spent many hours collecting top-notch prizes, and locals donated generously, so our raffle was a great success as well.

Fundraising Mailing-We combined our mailing this year with tickets to the Snowball, raffle tickets as well as our donor envelopes. This worked very well, and was less effort for the staff. Louise Kellogg Stumph was extremely helpful to us in this mailing. Her fundraising experience with the Nature Conservancy was invaluable and we are especially thankful to her.

Hotline sponsorship- Five local businesses, Stutevant's, The Elephant's Perch, Backwoods Mountains Sports, Proline Sports and Woodside RV, donated \$450.00 each to sponsor our daily advisory on the avalanche hotline. Thanks to the Friends of SVAC, we were able to purchase our own digital recording and answering machine this season that handles incoming calls on six lines. This machine is similar to others used in Montana and Utah. The sponsorships covered the cost of the six lines.

T-shirt sales-Backwoods Mountain Sports and Sun Summit are both retail outlets that have allowed us to sell our shirts. Sales have been steady and it is great to see our shirts around town on both locals and visitors.

Doug Abromeit-Director of our center and The National Avalanche Center, spent countless hours this past season raising funds for all of the avalanche centers. The survival of the avalanche centers throughout the west is reliant on the securing of steady funds on a national level, and Doug has worked tirelessly towards this goal. He is also working on tying all of the centers together so that our work is consistent and compatible. We are grateful for his efforts.

The total raised through the efforts of all the people involved in these events was over \$15,000. Again, we are very thankful for the support.

Media

Avalanches were a big part of the media this past season. The death of climber Alex Lowe, in an ice fall avalanche caught the media's attention worldwide. Destructive avalanches in Alaska also made headlines. Several national magazines including Outside and Skj, did features on avalanches. All of this media helps spread awareness about avalanches, but for a lot of people, avalanches are still something that happen to someone else, somewhere else. This changed a bit in our valley this winter when Lookout bowl was open on Baldy and slid during the day with skiers on the slope. This event was witnessed by everyone on the chairlift and opened many eyes. The event was covered by the local papers.

Karen Bosick did an article on avalanches and our center in the Twin Falls paper, and as was mentioned earlier, Janet and Anne Marie did a weekly education column in the Wood River Journal. Gary Stivers, a local radio reporter, did a great job keeping the public informed of our classes and events, as well as broadcasting the avalanche forecast during periods of higher avalanche danger. Many out of town skiers that went into the backcountry used our avalanche hotline for information. We also distributed phone stickers and business cards with the avalanche hotline and website information through local businesses, at trailheads and in classes.

Media is a powerful tool for reaching people and we will continue to use it to spread awareness and education any way we can.

Monthly Summaries 1999-2000

October:

Warm and clear, the first significant snowfall on Oct 28th. Enough to leave 8-12" on northerly aspects above 9000ft near Ketchum and 8500 ft back in the mountains. 1.2" Precip. at Galena Summit SNOTEL. Cold enough to begin faceting of this bottom layer of snow. Sunny slopes mostly melted off in early Nov.

November:

After initial snowfall in late October, shady aspects at upper elevations developing faceted snow. Some showery activity beginning November 7th, but no significant accumulation observed. Near Ketchum and southward, slopes remain bare. Upper elevations and further back in the mtns. A potentially problematic base layer of snow is sitting on shady aspects E through N and NW. Very warm temps for last part of month.

Upper elevations: 8500 & up: Facets existing at bottom of pack on shady aspects, MF crust or denser layer on most aspects mid pack (shady) or near surface (warm aspects).

Mid to lower elevations: where snow exists it is MF or very dense. Many S slopes bare or spotty.

Month of November Precipitation Records: (note: precip, not SWE-snow water equivalent)

Galena Summit 1.9" H2O, 46% of average Nov.

Big Wood Drainage 42% of average Nov.

Salmon River Drainage 82% of average Nov.

December:

Very warm on 1st, precip moves in warm, then turns cold. A series of light storms continue to add up. Some improvement in faceted base layer where snow is 2ft deep or more. Pockets continue in shallower areas and near trigger points(rocks). By Mid December there is limited skiing up high and in northern Sawtooths. Snowmobiling on roads supportive and can access upper elevations this way. Very strong gusty NW winds at end of storm #5, (Dec 13th), scour and wind slab all but most sheltered areas and southeast side of Galena summit. Somewhat inverted snowpack and windslab on light snow. Buried surface hoar from storm interval#4 beginning to show in shears & Rblock tests, N aspects. Storm #6 was little snow in town, 6-8" Galena Summit and again strong winds. Very Easy test failures storm interval #4 and early storm #5 cool, light density layer. Conditions getting more supportive mid to upper elevations, still very little snow at low elevation. The latter part of December was an entrenched high pressure system that brought a strong temperature inversion. Temperatures dropped into the teens (0 in Stanley) nightly on the valley floors and remained at or above freezing at upper elevations. The result was a weathered snowpack exposed to sun and earlier winds, and extensive faceting in shallower snowpack areas, with near surface facets and surface hoar prevalent on cooler aspects. Some crusts formed with rough surface textures on sunnier aspects, or bare ground.

Month of December Precipitation Records:

	<u>December</u>	<u>Water Year</u>
Galena Summit 2.2"H2O,	50% of average December(4.4")	51% of avg as of Oct 1st
Big Wood Drainage	57% of average December	50% of avg as of Oct 1st
Salmon River Drainage	93% of average December	82% of avg as of Oct 1st

January 2000:

The month began with a light, dry snowfall on existing dry, weak faceted snowpack. Jan. 8th brought a heavy, wet 2ft storm (initially cool=inverted pack), powerful W & NW winds. Many natural releases in Central and South Valley, fewer in North Valley which had a more solid snowpack initially. Highway 75 along Salmon River and 21 Stanley to Lowman were closed due to slide activity. Failures were a combination of new snow on weak depth hoar or surface slabs failing and stepping down into the ground layers. A series of smaller storms, wind transport and a temperature spike led to a skier triggered release of Lookout Bowl when it was open. Up to 5ft crown-wind slab that stepped down-Ran full track-1300ft, no one caught or injured- very lucky. Some continued unsettled weather then a cold spell, scattered showers and no activity. January 28th Skier triggered total burial in Baker Creek-Anne Marie, Kelly O' & Janet -live beacon recovery see notes.

Month of January Precipitation Records:

	<u>January</u>	<u>Water Year</u>
Galena Summit 4.5"H2O,	105% of average January(4.3")	76% of avg as of Oct 1st (9.7" vs 14.5")
Big Wood Drainage	115% of average January	71% of avg as of Oct 1st
Salmon River Drainage	101% of average January	88% of avg as of Oct 1st

February 2000

Began very warm temps following very cold at end of January. Some surface sluffing. Persistent facet layers and wind slabs overlying. Continued shallow, faceted areas with overlying slabs. NSFC and SH on some of the crusty aspects. Storm #14 dropped a little snow that was subjected to very warm temperatures. Some low elevation point releases ran to the ground, class 1 & 2's near rocky areas.

Storm #15 eased into the valley with moderate amounts of snow over a five days, then on Valentines day it hit with a vengeance. Strong winds (SW-N), rising temperatures and ultimately hard rain up to 6400ft, mixed higher.

A cycle ran during the storm and wind build up and surface releases at end of storm. Slabs built very quickly mid-day during the storm and Baldy patrol shut the bowls down. Post storm= inverted top 8-12" of snow made for punchy skiing. Wind effect very prevalent at all elevations, slabs a concern. Difficult crusts down low. NW and SE aspects weak facets beneath buried MF crust resulted in a skier slab release on the Funnel 2/19 and a NW skier release in Timber bowl. Both of these locations are along Galena Summit.

Some other skier releases were reported through the end of February, including a large out of bounds avalanche in Basset Gulch due to heavy wind loading on faceted layers. Strong south and east winds associated with the late February storms gave the first real wind loading from these directions that we had seen all season. The result were shallow west and north westerly aspects that had been scoured all year suddenly becoming covered with new slabs. This hidden hazard was the prevailing concern in the high country through most of March.

Month of February Precipitation Records:

	<u>February</u>	<u>Water Year</u>
Galena Summit 4.1" H2O,	134% of average February(3.1")	81% of avg as of Oct 1st (14.5" vs 18")
Big Wood Drainage	144% of average February	85% of avg as of Oct 1st
Salmon River Drainage	117% of average February	94% of avg as of Oct 1st

March 2000

March produced some excellent snow conditions. Early in the month moderate snowfall and mild temperatures led to excellent powder on the north slopes and shallow corn conditions on the due south aspects at mid to lower elevations. A moderate avalanche danger lingered due to crusts and weak layers on warmer aspects and near surface facets persisting on the northerly slopes. Strong wind transport left pocket slabs scattered throughout the region. All in all, it seemed that skiers and boarders played it very conservatively this season due to the number of near misses and the lingering layers reported in the snowpack. The snow machiners, however were venturing further and higher than ever. Unfortunately, due to an ongoing skier/snowmachiner conflict we were unable to get backcountry reports.

Month of March Precipitation Records:

	<u>March</u>	<u>Water Year</u>
Galena Summit 2.5" H2O,	83 % of average March(3.0")	81 % of avg as of Oct 1st (17" vs 21 ")
Big Wood Drainage	80% of average March	84% of avg as of Oct 1st
Salmon River Drainage	70% of average March	90% of avg as of Oct 1st

April 2000

A very good spring month compared to the past few years. Most spring storms went around us leaving excellent conditions for a fairly solid corn snow pack. Upper elevations remained a bit wintry but all other locations developed great spring skiing. The weather and dry conditions did lead to most folks skiing hard until it became too spring like in town, then thoughts turned to other forms of recreation. Snow/Water totals exhibit the "donut hole" that the Wood River Valley was in this spring. The latter part of April did bring rain showers and snow showers to help replenish the water supply for what appeared to be leading up to a dry summer. The Avalanche Center ended operations for the season on April 15th due to very good snow stability, lack of any upcoming weather systems and local interest heading towards summer type activities due to the early spring.

Month of April Precipitation Records:

	<u>April</u>	<u>Water Year</u>
Galena Summit 1.7" H2O,	81 % of average April(2.1")	81 % of avg as of Oct 1st (18.7" vs 23.1 ")
Big Wood Drainage	86% of average April	84 % of avg as of Oct 1st
Salmon River Drainage	74 % of average April	89 % of avg as of Oct 1st

A quick note, as the summer of 2000 proved to be a ferocious fire season: July water totals found the Big Wood River drainage to be at 79% of the water year average, and the Salmon River drainage to be at 85% of the water year average.

BUDGET: 1999-2000

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. Backwoods Mtn Sports, Sturtevant's, the Elephants Perch, ProLine Sports and Woodside RV generously sponsored the Avalanche Hotlines. 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 15,000 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 will develop in the year 2000-2001 to augment the local, regional and partnership funding that form the budgets of the various avalanche centers.

CONTRIBUTIONS AND FUNDING from 1999-2000:

Friends of the Sun Valley Avalanche Center Donations	
mail campaign (5,746.00)	
events (Snowball & Raffle 10,442.00)	
classes (700.00)	16,888.00
Region 4 USFS	5,000.00
USFS Winter Recreation Specialists, office and equipment use	
incl. Weather station, computer, local travel	5,000.00
National Forest Foundation matching grant from 1998-99	5,000.00
Hotline Sponsorship	2,250.00
TOTAL	34,138.00

EXPENDITURES: 1999-2000

Forecaster Salaries	19,414.00
Travel	322.00
Equipment & Supplies	1,237.00
USFS Winter Recreation Specialists, office and equipment use	
incl. Weather Station, computer and local travel	5,000.00
ERC Administration Fee (1999-2000)	1,810.00
Computer software, programming, datalogger repair	815.00
Internet Fees	240.00
Hotline Fees	1,528.00
Digital Phone Machine	3,060.00
Printing- hotline stickers, cards	500.00
TOTAL	33,696.00
BALANCE:	+ 212.00

IN-KIND CONTRIBUTIONS OF EQUIPMENT AND LABOR:

The Sun Valley Avalanche Center relies not only on cash contributions, but the more than \$15,650 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 its 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, refuel flight air lifts
and information from forecasters
\$3,500.00

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
\$2,000.00

Backwoods Mtn Sports, Sturtevant's, The Elephants Perch, ProLine Sports and Woodside RV
Hotline sponsors: \$450 each, including rotating message & covers 6 phone lines.
\$2,250.00

Smith Sport Optics Goggles, aprx retail: \$400.00
Patagonia- Gore-tex Jackets and Pants, aprx retail: \$2,500.00

THE FUTURE

The SVAC was able to reach and exceed many of the goals that were set at the beginning of the season. We taught more classes than we planned for, and were able to get some new ideas on how to further reach people in our community and outlying areas.

We continue to be challenged by the need for revenue to operate our center on the level of service we have established. Requests for avalanche information grows every season, yet the majority of our funds still come from donations raised by the non-profit Friends of the SVAC. The National Avalanche Center has been working with the Forest Service Winter Recreation directors from different regions and is gaining support for the centers in the Forest Service. We hope all centers will be able to be better funded in the future.

We are always looking for new ways to get the public to call in their observations of snow, weather and avalanche activity. Many people think that what they see will not be important, or that we have already seen the same thing. We put effort into conveying that every piece of information assists us in putting out a thorough and concise avalanche advisory.

Goals for the future include:

Implementation of the NAC web site and educational links

Outreach education to Forest Service staff in outlying areas so that they can begin teaching their own local avalanche awareness classes.

Now that we have achieved some of our goals for staffing and consistent classes we will be able to fine tune our community education programs and begin new ones.

Assist the Payette region Avalanche Information Center as they begin operations, and help other satellite centers develop.

Continue to pursue avalanche education for the forecasting staff, including attending the 2000 International Snow Science Workshop.

Work on grant proposal to State Parks to assist Payette and Northern Idaho Centers.

Continue with T-shirt sales and fundraising dance to promote awareness and raise funds-the center is for the community, thus it is vital they feel that they have ownership in the center.



APPENDIX

Annual Report 1999-2000

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

SVAC Avalanche Advisory
START

Today's avalanche report is brought to you by Backwoods Mountain Sports-Visit them for great backcountry gear and advice.

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 14th 2000 at 7am.

Last night at 5PM we issued an **Avalanche Warning** with the National Weather Service for the mountains of South Central Idaho. Due to Thursday's new snowfall on top of an already loaded, weak snowpack, as well as the forecast of continued ridgetop winds, additional snow and/or rain & unseasonably warm temperatures the avalanche danger is **HIGH**.

High Danger: means natural and human triggered avalanches are likely, and unstable slabs are likely on a variety of slope aspects and angles. Winter travel in the backcountry is not recommended and is in fact, strongly discouraged for the weekend.

Synopsis:

All of the components are out there for an increase in avalanche danger throughout the next couple days. Most of you have caught on the news that there was a double avalanche fatality Tuesday, in a large slide outside of the Canyons ski resort near Park City, Utah. I'd like to note here that the problems in that area's snowpack are similar to ours.

Control work on Baldy produced numerous releases in the Lower Bowls, and these conditions are similar to all of the side canyons in the Wood River Valley. Some new naturals were observed on the drive North to Galena yesterday. Avalanche paths that have not run yet, and particularly those from Durrance southward to Bellevue, may do so in the next few days as we get an increased snow load, warming temps and strong winds. Rain falling on new snow is capable of stimulating avalanche activity almost immediately in conditions like we have at the moment, and we may see some of this.

For those of you that are interested in the snowfall this past week: Baldy has received close to 3" of water, Galena Summit over 3"H₂O and Vienna mine 5" of water. This is a huge load to place on our very weak, underlying faceted snowpack that rested on the ground at New Year's. The information that we are getting about crust layers is that unless you^{at} in specific locations in the Galena Summit area, we have very weak snow beneath the crusts on the southerly aspects.

A few points I would like to make. With the type of snowpack that we have now, it is possible to trigger an avalanche from quite a distance if the snowpack collapses beneath you. This avalanche is also capable of propagating over an equally long distance and ripping out to the ground. One stability test on a slope may be misleading if it shows fair to good stability. There may be trigger points on a slope where the buried weak layer will react more readily to your weight if that layer is closer to the surface, like around rock outcroppings that are covered now. Rollovers and breakovers on a slope are under a lot of strain now and these places may be more likely to fracture.

Over time, these warm temperatures will help to stabilize the snowpack but for this weekend, the avalanche danger is significant and I would stay out of the backcountry unless you have very good snow evaluation & routefinding skills.

Warning Bulletin # 1

WE WOULD LIKE
TO KEEP THE AVALANCHE
WARNING IN PLACE THE
NEXT 24 hours +
Anne Marie will
update you by
7:30 AM Saturday
Thanks!

Weather Discussion: Continued south west flow into our area will bring warm temperatures and additional moisture. We could get rain in the valleys and rain mixed with snow up to mid elevations. Expect strong winds. Looks as if the most intense precip will be Saturday afternoon into Sunday. Drying out Monday (Shoveling out?) and a chance of snow again Tuesday.

Local Forecast:

Ridgetop winds: SW 20-35
10,000ft temps: max: 20-30 min: 15-20 snow: mountain snow showers
valley floor: max temp today: near 40 low: near 20

Titus Ridge at 10,000ft reports:

Onite low: 12, currently & max temp: 23
Winds currently: 23SW 24hr average: 22SW max gust: 51SW
New snow: 6" storm #: 9 storm total: about 8" we have gotten close to 3ft new since Sunday and there has been quite a bit of settlement on our snow stake up there.
Total depth at Galena Summit: 48"

Bald Mtn. At 9000ft reports:

Onite low: 19 Max temp: 29 presently: 26
Winds currently: 13S 24hr. average: 18SE max gust: 46S
New snow: looks like 7-8" storm total: close to 10"
Total depth: 45"

Valley Floor at 5800ft reports:

Onite low: 16 max temp: 25
New snow: 4" storm total: 5"
Total depth: 29"

Best Snow Conditions: Once again, groomed trails for all types and in bounds at the ski areas

Tip for the day: Patience This snow is great and conditions will stabilize over time.

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.

Observers: questions we'd like answered: Any new naturals you see please call as soon as you can.

An important announcement for early morning hikers on Baldy: The mountain is closed to all hikers on avalanche control mornings. It is up to you to ask mtn personel at the bottom.

Beacon clinic and practice 3pm every Thursday next to Bigwood Bread in the light industrial center.
Sponsored by Backwoods Mtn Sports.

Level II avalanche class by Sawtooth Mountain Guides. Call 774-3324 for details.

Upcoming Beacon Clinic at Woodside RV. Tuesday January 25th, 6-8PM.

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

WARNING
CANCELLED

SVAC Avalanche Advisory
START

Today's avalanche report is brought to you by Sturtevant's home of the no excuses boot fit guarantee

Good Morning, this is Anne Marie Devereaux with the Forest Service Sun Valley Avalanche Center with the Backcountry Avalanche Advisory and Weather Forecast for Saturday, January 15, 2000 at 7am.

Today the avalanche danger is estimated to be: Considerable in the Galena summit area and areas where there is a deeper snowpack, and High in the Central valley where the snowpack is shallow: this means that at upper elevations that have had a snowpack throughout the winter human triggered avalanches and unstable slabs are probable. At lower elevations throughout the valley human triggered avalanches and unstable slabs are likely on a variety of slope angles and aspects.

Synopsis: The predicted rapid rise in temperature with associated precip that was called for yesterday did not materialize in our area, so the avalanche warning that was issued yesterday in anticipation of this has been cancelled. However, we continue to have unstable and unpredictable conditions in the backcountry.

Most of you have probably heard about the avalanche that released in Lookout bowl on Baldy yesterday during operation. Despite exhaustive explosive control work and several days of skier compaction, a lingering deep hazard combined with newly wind transported snow, produced an avalanche. A hazard like this is difficult to detect or predict, so you must be assuming that it exists everywhere and be prepared.

Yesterday in the Galena summit area we found that the continued settlement of the snowpack has improved travel conditions, but on low angle slopes in the 20-30 degree range Rutschblock scores of #3 and #4 indicate only fair stability at best. I would recommend travel in the backcountry only if you are highly skilled at finding safe travel routes, analyzing terrain and interpreting stability tests. And even then I would not get on anything steeper than approx. 30 degrees. Wind affected areas continue to be very weak and unpredictable, so be looking for these areas as you travel and avoid them.

We strongly discourage travel in the central valley or anywhere that had little or no snow prior to this past week's storms. This shallow snowpack is extremely fragile, and will need very little additional stress to produce an avalanche. It is important to remember that you can trigger an avalanche from anywhere. You can be snowshoeing, snowmobiling or hiking on a flat road and if the snow beneath your feet collapses or whumps, you can trigger a slide on an adjoining steeper slope above you. And it does not take a big slope to produce a dangerous avalanche-small gullies, short break overs and terrain changes, all harbor different types of snow and can surprise you. If you are starting this holiday week-end by calling this forecast you are off on the right foot. I would encourage you to continue to make informed and safe decisions if you choose to travel this week-end, and spread the word amongst those you travel with.

Weather Discussion: The approaching weather system is very complex, but the bulk of the moisture is expected to arrive later today and Sunday. The NWS is again calling for a possible rise in temperature and snow mixed with rain as this front arrives, and if this materializes it is a red flag for avalanche hazard to increase.

Local Forecast:

Ridgetop winds: SW 15-25

10,000ft temps: max: 20-30 min: 20 snow: 2" possible

valley floor: max temp today: 34 low: 22 snow: snow mixed with rain

Titus Ridge at 10,000ft reports:

Onite low: 22

max temp: 25

presently: 22

Winds currently: 23 WSW 24 hr average: 22 SW max gust:50 WSW wind note: upper elevation winds have been blowing steadily SW 20-25 with gusts 30-50 for the past 36 hrs. Lots of snow transported off upper ridges.

New snow: none storm interval# 9 storm total:9"

Total depth at Galena Summit: 45" w/3" settlement last 24 hrs

Bald Mtn. At 9000ft reports:

Onite low: 24 Max temp: 29 presently:24

Winds currently: 12 SW 24hr. average: 22 SW max gust:50 WSW

New snow: none storm total:9"

Total depth: 43

Valley Floor at 5800ft reports:

Onite low: 17 max temp:31

New snow: 0 storm total:5"

Total depth:27"

Best Snow Conditions: The snow at upper elevations has become more supportable so it is possible to travel and have some fun on low angle terrain. Have your avalanche eyeballs wide open, and choose terrain carefully.

Tip for the day:Be prepared. The quick actions by the witnesses sitting on the chairlift on Baldy yesterday of blowing a whistle attached to a pack and shouting may have prevented the people on the slope at the time from getting caught in the slide. If you are going to travel in the backcountry beacons, probes, shovels and a good attitude are essential.

Any and all snow and weather observations are very helpful to us. We really appreciate the calls we have received throughout the week but we always need MORE! Please call us if you get out today with any observations.

We'd also like to thank our friends on the Sun Valley Ski Patrol for their quick and prepared response to yesterday's slide, and to ask all early morning hikers to be informed and know that Baldy is closed to hiking on avalanche control mornings. It is up to you to ask mtn. Personnel at the bottom.

Upcoming Beacon Clinic at Woodside RV. Tuesday January 25th, 6-8PM.

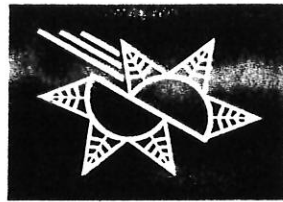
If you haven't seen our video: Riding Safely in Avalanche Country, check it out. This video is for sale at local snowmobile shops, the ERC, Ketchum Ranger District, through nac@sunvalley.net, and for rent from the Video Depot in Hailey and Ketchum. All proceeds go to avalanche education.

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

Come join us at the



SUN VALLEY
AVALANCHE
CENTER

SNOW BALL

Saturday, January 9th at the Next Stage Theater, 7-12pm

Dancing

Music by: The Joast Points

Beer & Wine

Great Raffle Prizes & Silent Auction:

The North Face, Voilé, Marmot, Lifelink, MSR, Crazy Creek, Local restaurants & Others

Grand Prize: "The" Skis from Bobby Burns

Raffle tickets will be sold at local shops, by roving friends
& at the dance. Cover charge is \$10 at the door.

Look for "The Salt Men Of Tibet," showing Jan. 10 & 11
at the Magic Lantern Theater

**This Benefit Weekend Is The 1999 Fundraising Drive
By The Friends Of The Sun Valley Avalanche Center**

ENCLOSED IS OUR 1999 DONORS ENVELOPE

Thank You!



EXPRESS

January 19, 2000
Vol. 28, No. 9

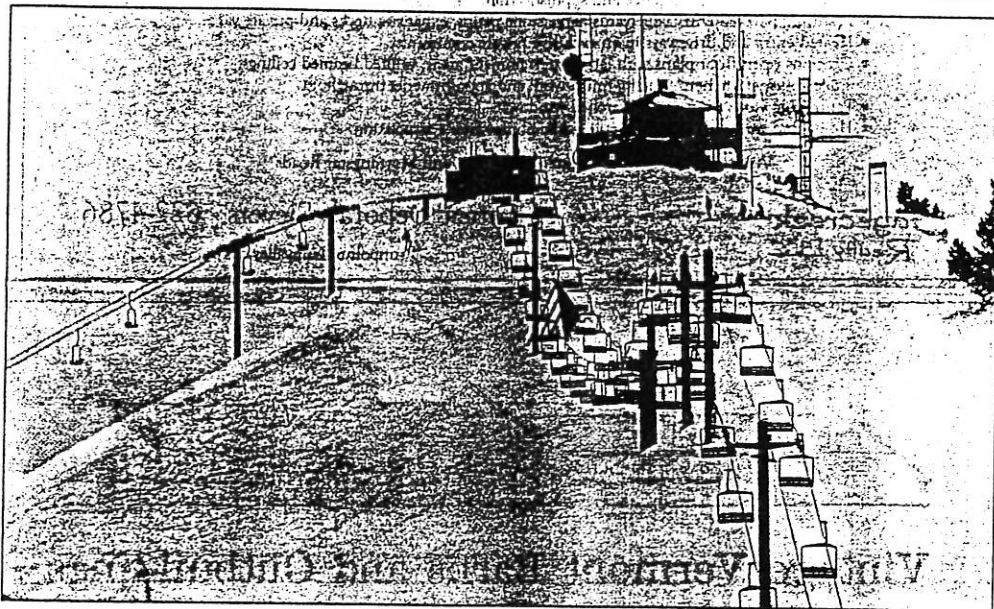
Fast track urged for Greenhorn Bridge

Page A3

Three "Rs" in Blaine County

New county high school studied

Pages A4, A14



A MAJOR AVALANCHE RIPPED LOOSE FROM BALD MOUNTAIN on Friday morning, sweeping 1,000 feet down a vertical slope. The 150-foot-wide snow slab started at 9,000 feet in Lookout Bowl, above left. The avalanche occurred within ski area boundaries, narrowly missing a skier. Express photo by Willy Cook

Lookout Bowl avalanche

Nobody injured as big snow slab breaks loose

Complete story and pictures on Page A3

Local Democrats knock State of State

Page A5

Blaine County's different worlds

Page B1

Pat Hickey

Ketchum musician hooks
up with Nigerian band

Page C1



Bald Mountain avalanche a reminder of need to be careful

By GREG STAHL

Express Staff Writer

The avalanche in Bald Mountain's Lookout Bowl on Friday, Jan. 14, was an almost lethal reminder of just how dangerous and unpredictable winter in the mountains can be, even within the controlled boundaries of a ski area.

With rising temperatures, significant new snowfall and a weak base layer of snow, a three-foot-thick slab of snow—150-feet wide—swept more than 1,000 feet down Lookout Bowl. No one was caught by the slide, and two local residents who watched the Sun Valley Ski Patrol jump into action after the slide hailed their follow-up performance.

But the fact that an avalanche occurred on an open ski run at a major Western ski resort while skiers navigated the run raises questions in the minds of some critics whether the run should have been open at all. Rising temperatures and significant new snowfall should have been clues of imminent danger, they contend.

The ski patrol, abiding by Sun Valley Co. policy, referred such questions to Sun Valley's public relations officer, Jack Sibbach.

Sibbach said the ski patrol and mountain manager, together, decide what parts of the mountain will be open. He said the ski patrol "probably" has more power making such calls. Safety comes first, Sibbach said.

When asked what other considerations go into opening the ski area, Sibbach responded that no other considerations are more important than safety.

In-ski-area-boundary avalanches in open areas are nothing new to Sun Valley's Bald Mountain.

In January of 1998 local skier Darin Sales was buried by an avalanche below Gretchen's Gold in Seattle Ridge area's trees when he triggered a slide.

Adam Kraft, who was skiing with Sales at the time of the slide, began digging his buried friend out and was later assisted by ski patrol members.

Another slide in 1951 ripped down Easter Bowl, burying and killing a class of students and a ski instructor. Only one body was found before the spring sun melted the snow.

Inbounds avalanches are also nothing new to ski resorts



Express photo by Willy Cook

FIRE AND ICE. A west-Ketchum pile of firewood collects layers of fluffy ice as winter continues to mount. Though the wood stack isn't ready to slide, the piling snows of late should be trod on carefully in the mountains. There have already been 10 North American avalanche deaths this winter.

around the West.

In fact, last weekend a man was killed skiing inside the boundaries of Crystal Mountain Ski Area in Washington. The avalanche victim and a friend were on a closed slope that had undergone avalanche control work earlier in the day, according to an accident report written by Crystal Mountain ski patrollers.

Another avalanche occurred the same day on an open slope at Crystal Mountain, breaking another man's leg.

Avalanche experts say predicting avalanches is as much art as it is science, and that fact is reiterated as winter mountains continue to swallow experienced winter backcountry travelers throughout the West.

So far this winter, 10 people have died in avalanches in North America. Some were experienced in the backcountry, and some were not, according to the North American Avalanche Center's Internet site.

As the snow continues to pile on, local avalanche danger will remain considerable to high.

The Sun Valley Avalanche Center called for "considerable" avalanche danger by day's end yesterday as snow accumulations steadily continued through the morning.

"North facing aspects [of mountains] are harboring the weakest snow, and the crusts on the sunny aspects could be a sliding surface for the new snow. Use good route selection and heads up travel techniques today to get out and enjoy the new snow," the report read.

Snow is expected to continue through Thursday and cool, cloudy conditions will usher in the weekend.

1974



1999

Avalanche sweeps down Baldy

Nobody injured; slide nearly buries skier

By GREG STAHL

Express Staff Writer

At 11:12 a.m. Friday, a slab of windblown, heavy snow 150-feet wide and three feet thick broke loose from Bald Mountain's pinnacle in Lookout Bowl and swept over 1,000 vertical feet down the mountain.

A woman, known to ski patrollers simply as "the woman in red" because of her red ski suit, was nearly caught in the slide. She was able to ski to a ridge on one of the bowl's sides as the avalanche passed, according to reports from eyewitnesses who were riding the Mayday chairlift.

Had she or anyone else been caught by the slide, it could have meant their deaths.

Bald Mountain ski lifts were promptly closed as all available mountain personnel attended to the slide. Masses of skiers and snowboarders milled around the bases of the mountain waiting to receive lift ticket refunds, swilling cold ones or filling the grapevine with rumors of the avalanche.

The Warm Springs and River Run sides of the mountain reopened at 1:05 p.m., but Seattle Ridge and bowl areas remained closed.

At the time the avalanche released, Tom Boley, direc-

tor of The Community School's outdoor program, and Beau Mills, member of the Galena Backcountry Ski Patrol, were working with the Sun Valley Ski Patrol to teach a group of Community School 8th graders about avalanche safety.

Boley and Mills, both experienced in the backcountry, were impressed with how the Sun Valley Ski Patrol worked under pressure.

Mills called the ski patrol's work "outstanding" and "textbook."

"They covered every angle possible. It was quick and efficient," she said.

Boley said several groups of ski patrollers were in the bowl within a minute after it slid.

"I'm just left with a lot of appreciation and respect for what they do up there," he said.

According to Sun Valley Co. spokesman Jack Sibbach, an avalanche transceiver search was performed over the entire slide area. Also, two avalanche search dogs combed the area twice, and two waves of avalanche probe lines meticulously searched the debris.

Nothing was found, which matches witness reports stating that no one was caught in the slide.



Express photo by Willy Cook

CLINT JONES ON THE AVALANCHE: "It didn't look like that much, but you could tell it had some power behind it. Once it started, it had some power."

Several more skiers and snowboarders had a bird's eye view of the slide from the Mayday and Lookout chairlifts.

Ketchum resident Jason Howell saw the slide from Mayday. He was about two thirds of the way up the lift when the slab broke loose, he said.

"It was kind of scary," he said. "It looked like it was going 60 miles an hour in a quarter mile. It was crazy. There was a snow cloud 80 to 100 feet in the air."

Clint Jones was also on the Mayday lift when the slide broke loose.

Jones reported that "the woman in red" had about 30 seconds to get out of the way, and everyone who could see what was going on yelled at her to keep skiing to the side of the bowl.

"It didn't look like that much, but you could tell it had some power behind it. Once it started, it had some power," Jones said.

According to avalanche.org, an on-line look at avalanche conditions around the West, there have been nine avalanche-related fatalities in North America this year. Two of those occurred in Utah last Tuesday in similar snow conditions to what exist locally.

Over the weekend, local hills and mountainsides were reported to have very high avalanche danger. That danger is subsiding slightly at higher elevations as the snowpack settles, according to the Sun Valley Avalanche Center's daily avalanche report. Lower elevations are still extremely dangerous.

Though cloudy, the weather is not expected to dump considerable amounts of snow on the Wood River Valley in the coming days. The snowpack should continue to settle and stabilize.

Snow Savvy



**AVALANCHE
HOTLINE**
622-8027
OBSERVER HOTLINE
622-0099
www.avalanche.org

**SUN VALLEY
AVALANCHE
CENTER**

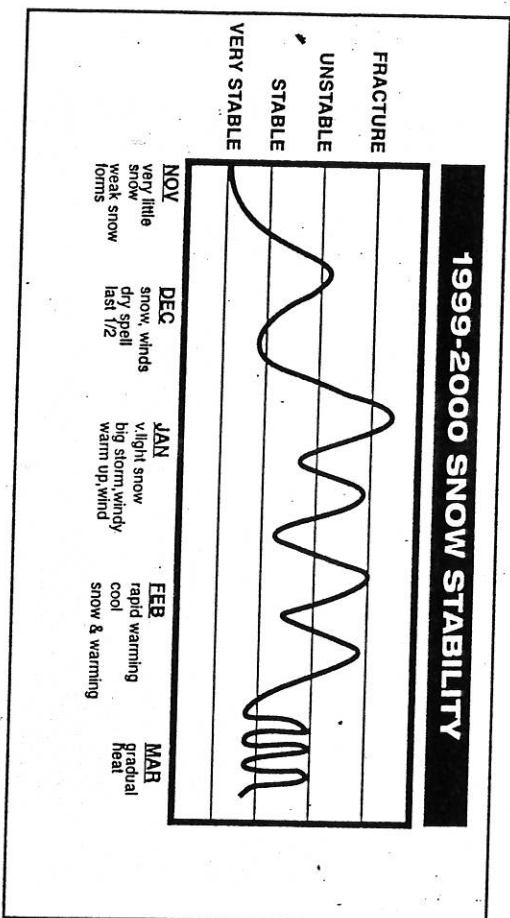
BY JANET KELLAM

Evaluating snow stability: An ongoing process

By: Janet Kellam
Avalanche hotline: 622-8027
www.avalanche.org

From November through springtime, snowflakes are part of an ever-changing process. The soft, fluffy crystals that fall out of the sky eventually become the solid corn snow grains that Sun Valley is famous for. Just as the snowpack evolves throughout the season due to weather changes and events, so should your personal evaluations of snow stability.

The chart pictured here is a brief summary of the past winter, and the ebb and flow of snow stability conditions. Each winter can be different. In the daily avalanche advisory, we often discuss anticipated snowpack changes based on



weather events or trends. The spells of clear weather and how subsequent storms evolve will affect just how stable or unstable the snowpack becomes during and after those storms.

It is important to anticipate what snow and stability conditions you will find each day that you go into the backcountry, then look for clues and make observations about what you see out there. By comparing your field observations with your "forecast," you can then make adjustments in your "forecast" and your backcountry travel plans throughout the day. The key is to look for snow and weather clues that help to eliminate any uncertainty that you may have about the snow stability (or instability). If you hear whumping sounds, see shooting cracks or natural avalanches, that gives you a lot of certainty that the snowpack is unstable. Conversely, if you dig snowpits, poke in the snow as you travel, see no weak layers or shears in the snowpack, and quick stability tests show a solid, homogeneous pack, then you have a lot of certainty that the snowpack is stable. The more you do this, the more skills and knowledge you will gain about snow and avalanche evaluation.

Snow



Savvy

AVALANCHE
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OBSERVER HOTLINE
622-0099
www.avalanche.org

WHAT IF?

BY ANNE MARIE DEVEREAUX

Last Friday, January 28, there was a skier-triggered avalanche in alpine terrain that caught the skier and completely buried her. The skier's partners observed the slide, watched their partner until she disappeared and then performed a transceiver search and rescue in under five minutes, recovering their partner alive and uninjured. I was part of this group, and I am writing this so that all of you who read it will hopefully learn something from it and share what you learn with anyone that travels in the backcountry.

On Monday, January 25, the Sun Valley Avalanche Center received a report from Sun Valley Heli-Ski of a slide that appeared to have been triggered by a snowmobile that was high-marking in Apollo Creek, a drainage of Baker Creek. On Thursday,

Janet Kellam and I decided we would take snowmobiles out Baker Creek the next day, and ski tour up into the basin to examine the snowpack where the snowmobiles were high-marking. We invited Kelly O'Neill, an experienced backcountry skier and regular tour partner, to come along.

Friday morning we snowmobiled out to the end of the summer road, parked, and skied up to a ridge between Baker Lake and Baker Peak. We did stability tests on a 36-degree slope, northwest aspect, and results indicated good overall stability, with a very thin wind slab, about one inch thick, on the surface that could be a future sliding layer with any new snow. We then crossed over the ridge to an east-southeast aspect that had a very hard wind slab, "knife hard" in avalanche terminology, from the past week of light winds from the northwest, and previous westerly wind events.

Janet removed her skis and cut steps down the slope on a small ridge and tromped around, testing the stability of the slab with no results. She returned to the ridgetop, and I then skied and sideslipped onto another small ridge. This slab was so hard you could barely get your ski edges into it, but when I reached a small concavity adjacent to a rock outcrop, a small piece of the wind slab about eight inches deep broke and slid about four inches. I jumped around on the slab to see if I could get it to move, and got no further activity.

Examining the snow crystals underlying the slab with a high-powered lens, I saw that they were "faceted," meaning angular and poorly bonded.

We had been seeing this same loose, sugary, faceted snow the past few days in many locations, both on the snow surface and within the snowpack. The cold temperatures and clear skies promote the formation of these crystals, increasing the avalanche danger in a very insidious and subtle way.

People often think that the avalanche danger decreases when you don't get any new snow, when in reality the exact

opposite can happen. We had been tracking this process throughout the week and testing extensively to see how it had been affecting the stability, and so far it had not presented any serious stability problems; we were most worried about how it would react with a new snow load.

Janet and Kelly asked if they could come down to the subridge that I was on and I told them to follow my track and

the debris and immediately switched our beacons to receive and proceeded onto the debris to the area where she was last seen.



Anne Marie Devereaux and Kelly O'Neill gather their belongings after doing a beacon search and rescue of Janet Kellam. Kellam was under the snow for four minutes, but was well enough to ski out after she was uncovered. They found her near the upright ski at the left of the photo. The slide path is above them. (Photo courtesy of Janet Kellam)

come to me, which they did, one at a time. We were on a small ridge that ended halfway between two slopes that were about 150 feet long, and about 30-32 degrees where we were standing, increasing in steepness above us.

I told Janet that I did not feel comfortable digging a pit on this slope, mostly because the slab was so hard I did not want to get out on it and slip as I was jockeying around trying to dig. She agreed, and then we discussed the fact that there was the potential for a wind slab to be triggered, but we felt that it would take a very large shock on the slope as the slab did not want to move despite our jumping around.

There was a small basin below us with a sheltered north-facing slope opposite our ridge and I told Kelly and Janet that I wanted to dig a quick pit over there. To get there required a short, fast, downward traverse of the slope to the skier's right of our subridge. I did the traverse on the hard wind slab, mentally noting that there was one patch of powder snow about midway on the slope, finished the traverse and moved to a safe spot. I turned around to watch Kelly as she did the traverse, which took about 10 seconds. She traversed to me and we watched Janet as she began her traverse. When she was midway, the entire slope fractured like a rock shattering a window, and the fracture propagated to much steeper terrain above and beyond the slope we were on. She did not have a chance to get off of the slope before the slide knocked her over.

We watched her moving down the

slope while simultaneously pulling out our beacons, never taking our eyes off of her. She fought the entire ride to stay on the top, only being buried as the slide slowed down and the snow piled up at the bottom. We knew she was in the toe of

crossed, leaving the slope unable to support the last skier. Who knows? This is very difficult to determine for certain. However, we did misjudge the terrain that was connected to the slope we were crossing. The fracture propagated into very steep and rocky terrain around the ridge above us, making the slide larger than the slope we were on.

This was not a very large slide, but it was enough to completely bury a person! The fracture line ranged from six to 18 inches deep, it was about 150 feet wide

and 200 feet long, running approximately 400 vertical feet. We crossed on the bottom third of the slope, where it was the least steep. None of this matters - all of the snow is connected whether you are crossing the steep part or standing on the flats at the bottom. You can trigger a slide from anywhere. And it does not take a lot of snow to bury you or kill you.

What Went Right?

We were a small group that knew each other well, were well practiced with our rescue skills and beacons, and knew how to cope in an emergency.

IF YOU READ ANY PART OF THIS ARTICLE READ THIS: If you choose to travel in the backcountry you MUST be prepared with beacons, probes and shovels. I do not want any one of you to ever have to search for a person with a beacon. If it is your friend or wife or husband that has disappeared under the snow, you had better be ready.

You have to have practiced with your beacon so that you know it inside and out, because let me tell you - my heart was pounding and my hands were shaking and this is no time to be fumbling around trying to get your beacon out from under your clothes or trying to remember how it works. Your shovel needs to be put together, not stored in two pieces in your pack. Everything went right for us and she was still almost out of air when we got to her.

SECONDS COUNT. You MUST travel smart - expose only one person on a slope at any given time. Always travel from safe spot to safe spot, and watch every person in your group. Try to be thinking about what you would do if there was an avalanche - if I ski way down the slope and away from my partner, how far will I have to hike back up to rescue them if there is a slide? If my buddy gets his snowmachine stuck, should I get on the slope to help him or should I stand by in a safe spot until he is free?

Keep your brain plugged in when you go out, do your best to evaluate everything and keep your backups in place by traveling safely and being trained in rescue, and chances are you will never get caught in a slide.

It is ironic that people travel all over without any training or evaluation of the snow. Perhaps they jump out of bounds on Baldy, completely unprepared for backcountry conditions, or as snowmobilers, highmark in steep alpine terrain, and nothing happens. Then three experienced and conservative backcountry travelers get caught in an avalanche. If there is any good to this incident, it is this: It was the best case scenario of the worst case scenario.

An avalanche happened, a person was buried and the person was rescued alive. People pay attention when there is an accident. If even one person takes this seriously, practices their rescue skills and beacon training more frequently, and travels more carefully in the backcountry, then there is no irony, because there is a purpose.

She fought the entire ride to stay on the top, only being buried as the slide slowed down and the snow piled up at the bottom. We knew she was in the toe of the debris and immediately switched our beacons to receive.

I contacted Sun Valley Heli-Ski who were skiing in the area, via radio, and informed them of the event. We gathered ourselves together, hugged a lot and left the area. By the time we reached the parking lot, the rumors were already circulating at Grumpy's from someone who had been scanning the radio and heard the transmissions to Sun Valley Heli-Ski. Wow.

What Went Wrong?

As a professional in the field, there is always a real possibility that you may get caught in an avalanche, particularly when the snowpack is what we have now - difficult to predict. Old buried weak layers, no recent snowfall, small localized wind events, all combine to make the hazard hard to pinpoint. My suspicion is that when Janet's skis hit that patch of powder snow between the wind slabs, she may have penetrated deep enough to cause failure of the weak layer, leading the slope to fracture.

Kelly and I may have stressed the pack almost to its breaking point when we



SKI REPORT

Last updated on:

Sunday, April 16, 2000 05:26

NEW SNOW: 0" in the last 24 hours

0" in the last 48 hours.

TOP DEPTH: 58"

MID: 21"

BASE: 12"

SEASON 137"

TOTAL:

GROOMED RUNS

Warm Springs Top to Bottom, Mid Hemingway, Upper and Lower College, Flying Squirrel, Ridge, Blue Grouse, Cut Off, Lower Canyon, Gretchen's Gold, Southern Comfort, Broadway Face to the bottom of lift #12, and Mid and Lower River Run

AMOUNT OPEN:

84% (excluding areas designated for avalanche control).

BALD MOUNTAIN LIFTS OPERATING

River Run Express (#1), Christmas (#3), Lookout Express (#5), Challenger (#10), Seattle Ridge (#12), Mayday (#14).

DOLLAR MOUNTAIN LIFTS OPERATING

Dollar Mountain is closed for the season.

OUT OF BOUNDS SKIING

Sun Valley Company does not recommend out of bounds skiing, but if your plans are such, we highly recommend calling the Avalanche Center at 208-622-8027.

BEST SKIING

ALL OPEN AREAS!!!

OPEN AREAS

84% OPEN (EXCLUDING AREAS DESIGNATED FOR AVALANCHE CONTROL)

RACE INFORMATION

SNOWSHOE TRAILS

The Snowshoe trail on Bald Mountain is open from Lookout Restaurant to Seattle Ridge. Snowshoers must return from Seattle Ridge no later than 2 p.m. to accommodate mountain closures. The snowshoe trail to Seattle Ridge will close on Sunday April 16, 2000.

**Sign-up for the daily ski report
via email**

February 18, 2000

Dear Janet,

The other day you were kind enough to take the Silver Creek Alternative School out on an avalanche safety course. I personally was very excited to be out there, learning how to help others if the time ever came.

You made the course thorough, fun, and even exciting. We were allowed to practice with actual beacons and "victims." I just wish everyone would be able to learn about avalanches so more people are rescued and lives saved. Thank you very much for taking the time to make sure we alternative kids stay safe in the great outdoors.

Thank you,
Barbara Jo Palazuelos

Barbara Jo Palazuelos

Colin Saway

Larry Bieba

*Salena
Doring*

*Therese
Smith*

*Paulina
Valencia*

Thanks Janet,
great presentation!

Boyle

Thanks Janet for all your time and help
in making this course possible!
-Eleanor

Avalanche Center says thanks

Dear Editor:

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 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 2001 season ski pass was the grand raffle prize. Over

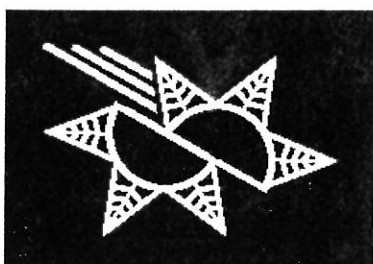
\$10,000 was raised by the event to help support the operations of the avalanche center for next season.

The Sensational Toast Points, Sun Valley Heli-Ski, Mike Brunetto and Wolf Ski, The Friends Avalanche Awareness Committee, Louise Stumph, Michael Malko, the ERC, Sun Valley Trekking, Jytte and Rolfe, Nils Ribí and Patricia Brolin, Warm Springs Sleighs, and to all of you that helped out, we send a big thanks. It never would have happened if not for your enthusiasm and dedication. And 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 was it one of the best local gatherings of the springtime, 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: Ketchum Ranger District, Janet Kellam, Anne Marie Devereaux, Doug Abromeit, David Gordon and Pat Deal



SUN VALLEY
AVALANCHE
C E N T E R

www.avalanche.org

www.csac.org

USEFUL INTERNET SITES FOR SNOW & WEATHER

Weather

<http://www.boi.noaa.gov/>

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

<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/devel/meso_station.cgi?area=1

<http://www.met.utah.edu/cgi-bin/devel/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 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 FORECAST CENTER

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
Mt Ogden + South (Ogden) (801)626-8700
Web-site: <http://www.avalanche.org/~uafc/index.phtml>

UAFC/ LOGAN AVALANCHE FORECAST CENTER

Hotline: (435) 797-4146 Logan
(208) 239-7650 SE Idaho
Web-site: <http://www.usu.edu/~uafclogn/>

UAFC/ LASAL AVALANCHE FORECAST CENTER

Hotline: (801) 259-SNOW
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

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

CYBERSPACE AVALANCHE CENTER www.csac.org

CANADIAN AVALANCHE ASSOCIATION www.avalanche.ca