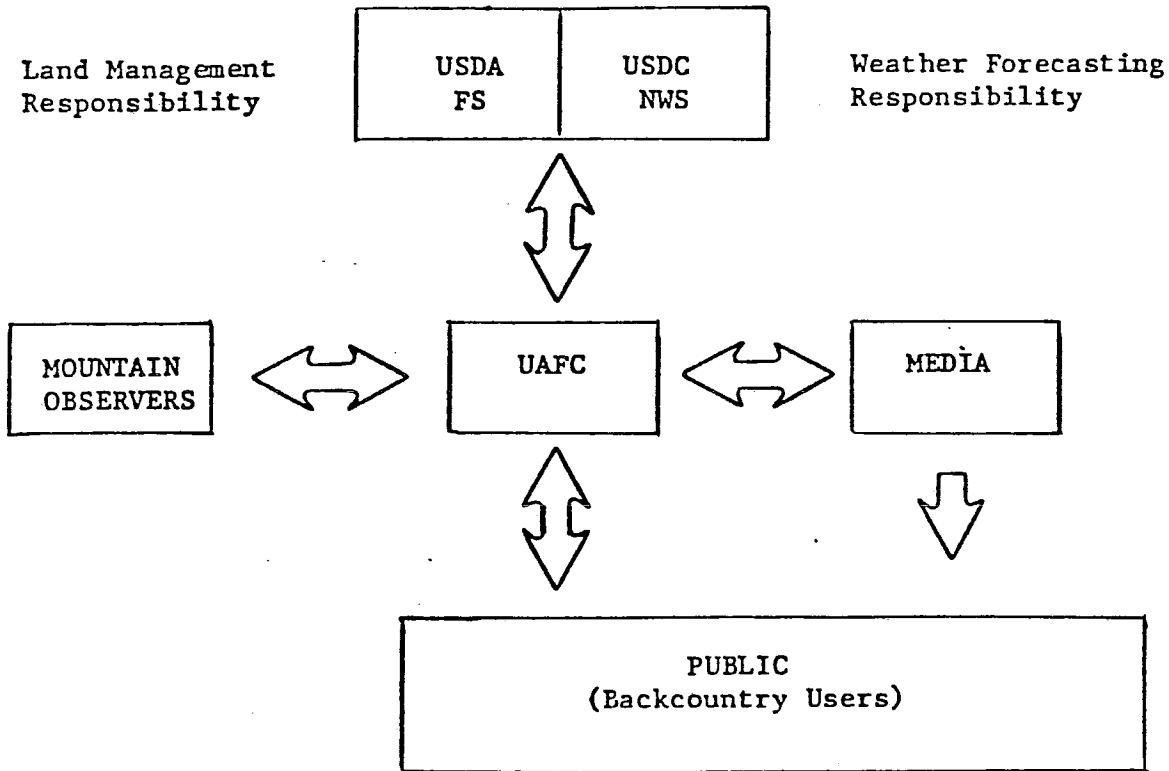


UTAH AVALANCHE FORECAST CENTER
AVALANCHE AND MOUNTAIN WEATHER INFORMATION
1980 - 1982



The Utah Avalanche Forecast Center is a cooperative venture between the USDA Forest Service and the USDC National Weather Service. Arrows show communication responsibilities and information flow.

**AVALANCHE & MOUNTAIN
WEATHER INFORMATION**

USDA FOREST SERVICE
USDC NATIONAL WEATHER SERVICE
UTAH AVALANCHE FORECAST CENTER
337 NORTH 2370 WEST, EXECUTIVE TERMINAL BLDG.
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In Salt Lake City
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In Ogden
621-2362
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Utah Avalanche Forecast Center
USDA Forest Service/
USDC National Weather Service

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1.0 FOREWARD

According to the 1980 Utah State Park Outdoor Recreation Plan, most alpine skiing and over 73% of all snowmobiling and ski touring in Utah takes place on federal land. Because of an increase of participation, along with the problem of participators getting caught in avalanches, the responsibilities of land managers have greatly increased.

Due to land management responsibilities in the Wasatch Mountains the USDA Forest Service has traditionally assumed the responsibility for providing the public with information about hazardous snow conditions. Prior to 1976 snow rangers disseminated avalanche information as best they could using the telephone and local media on an intermittent basis. In 1976 a telephone recording device was installed in the Wasatch National Forest Salt Lake District Office and received 6,522 calls. The call rate increased until in 1980 the demand exceeded the capabilities of the recording device with calls totalling 14,469.

In the spring of 1980 an Interagency Cooperative Agreement between the USDA Forest Service and the USDC National Weather Service was finalized and the Utah Avalanche Forecast Center was established at the National Weather Service Forecast Office in Salt Lake City. Additional telephone and weather recording equipment was purchased by the Forest Service. Permittees, private businesses, special interest groups, and other individuals living in the mountains were contacted and agreed to contribute snow condition and weather observations. A daily forecasting format was devised by avalanche and weather forecasters including an avalanche and mountain weather statement. The public was informed of the service through various media campaigns, public speaking engagements, and stickers with the number to call available from displays in most of the outdoor recreation stores. In 1981 the total number of calls increased to 30,736.

In 1982 two remotely operated recording machines were added at Ogden and

Provo and the calls increased to 41,610. The daily forecast was also extended to Park City and Logan via local radio broadcasts from KPCW and KUSU stations. Listener feedback soon had the two stations repeating the recorded forecast several times a day with calls for more frequent updates from the UAFC.

The function of the UAFC is to act as an informational clearing house processing mountain observations from a numerous and wide variety of sources located in the Wasatch Mountains. Through these observations and immediate access to weather charts and satellite photos the patterns of snow distribution and variations in conditions become apparent. With experience and timely reporting it is possible to generalize information about conditions within a particular zone of the Wasatch Mountains. There is evidence that the information disseminated to the public from these observations is significantly reducing the number of avalanche accidents in the Intermountain area.

In the Western United states during a two year period from November 1980 through April 1982 at least 312 people were caught in snow avalanches. Reportedly 117 people were buried resulting in 21 injuries and 41 fatalities. In the Intermountain area at least 73 people were caught, approximately 29 people were buried resulting in 8 reported injuries and 5 fatalities. During the past 131 years of recorded weather in Utah there have been 205 avalanche fatalities. Avalanche fatalities are the state's largest category of natural disaster.

The past two years have shown a large increase in avalanche accidents in the Western United States;

Western United States 1980-81	Western United States 1981-82
120 caught	192 caught
47 buried	70 buried
7 injured	14 injured
*23 fatalities	18 fatalities
*11 killed on Mt. Ranier in May	

The total number of avalanches reported in the Western United States also increased from 5,695 in 1981 to 9,850 in 1982.

In spite of these grim April statistics from the Fort Collins Westwide Avalanche Network, avalanche accidents in the Intermountain area have decreased.

Intermountain Area 1980-81	Intermountain Area 1981-82
43 caught	30 caught
17 buried	12 buried
4 injured	4 injured
5 fatalities	1 fatality

The total number of avalanches reported in the Intermountain area also increased by 70% from 1,322 reported in 1981 to 2,251 in 1982. The number of cross-country skiers using the backcountry in the Salt Lake area of the Wasatch Mountains is presently showing a 12% (Lowin, 1982) to 25% (Poor, 1982) yearly increase.

The reduction in the number of avalanche accidents is particularly encouraging to UAFC efforts. These statistics suggest an increase in awareness of avalanche hazards among backcountry users in the Intermountain area.

1.1 CONCEPT, GOALS AND OBJECTIVES OF THE UAFC

The Utah Avalanche Forecast Center is a cooperative venture developed jointly by the USDA Forest Service and the USDC National Weather Service. The Forest Service provides two avalanche hazard forecasters, weather and communication equipment, and an operating budget. The National Weather Service contributes office space, meteorological expertise, computer and teletype equipment, and immediate access to media sources. The net result has been a reduction in the number of avalanche accidents and a significant improvement in mountain weather forecasting accuracy.

The UAFC uses a centralized snow avalanche forecasting approach first established in Switzerland and later developed in the United States by forecasters in Colorado and Washington. Mountain weather observations are funneled to forecasters at the National Weather Service Forecast Office in Salt Lake from various locations along the Wasatch Front. Meteorological information available from satellite photos and weather charts are added to the mountain observations and a forecast of avalanche and mountain weather conditions is developed.

The avalanche and mountain weather forecast is communicated to the public from the Weather Service Office by remote transcription to telephone announcing devices located at Forest Service Offices within the major population centers along the Wasatch Range. If a warning of high or extremely hazardous snow conditions is necessary, more rapid dissemination of the forecast is possible through media microphones, NOAA Weather Radio, and teletype lines immediately available at the National Weather Service Office.

As it was originally conceived, the goal of the UAFC was to promote safety among winter recreationists through a broader understanding of the avalanche phenomena. The program remains committed to this goal. Additional benefits—to ski areas, touring centers, the highway department, and other groups have been demonstrated through feedback on general snow stability and improved mountain weather forecasting.

Objectives of the UAFC program include accurate daily forecasts for recreationists including site specific information on where to look and how to evaluate the avalanche hazard, the timely origination and termination of avalanche warnings, improvement of mountain weather data acquisition and forecasting accuracy, providing local avalanche forecasters with a summary of regional stability trends and mountain weather forecasts, existing as a resource and repository for avalanche information presentations and educational materials, providing investigative personnel in case of avalanche accidents, and to assist as directed with the administration of Forest Service permittees. Objectives are evaluated and updated frequently. Specific objectives and a proposed budget are contained in the appendix.

2.0 BACKGROUND

2.1 UAFC FORECAST AREA

The principal UAFC forecast area includes the northern Wasatch Mountains in an East-West area approximately 30 miles wide and a North-South area approximately 130 miles long (see Figure 1). Known as the Wasatch Front, this 3900 square mile area is located in North-Central Utah between 111 and 113 degrees West longitude, 40 and 42 degrees North latitude. The Wasatch Mountains form the Eastern boundary of the Great Basin rising from ~~4,400 feet at the valley~~ floor to elevations in excess of 12,000 feet. Most of the mountainous area is on federal land administrated by USDA Forest Service.

Avalanche warnings and mountain weather advisories are also issued for other parts of the region when it is known that abnormally hazardous conditions exist in those areas. Avalanche forecasts and warnings issued by the UAFC are for the backcountry only. Backcountry is defined as undeveloped land outside ski area boundaries.

Figure 1

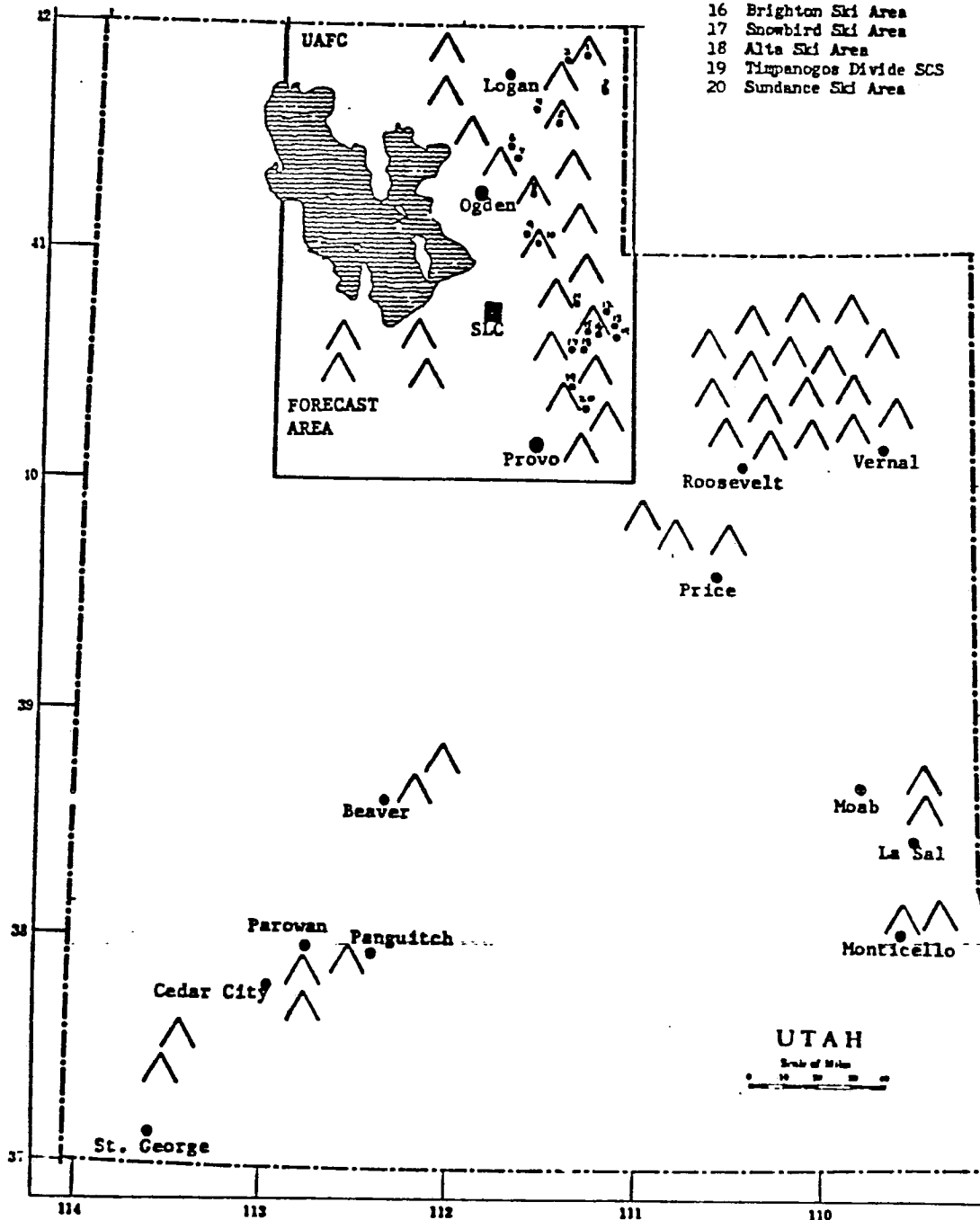
UAFC MOUNTAIN WEATHER SOURCES - ELEVATION - INSTRUMENTS:

1980 UTAH POPULATION FIGURES

1,400,000 Total population
 1,200,000 Forecast area population = 85%
 3.79% Utah annual growth rate
 1.1 % National annual growth rate

No.	Name	Elevation	Instruments
1	Beaver Mountain Ski Area	7200-8800	*S-T
2	Tony Grove Lakes SCS	8400	S-T-P-WE
3	Bug Lake SCS	7950	S-T-P-WE
4	Little Bear Upper SCS	6550	S-T-P-WE
5	Powder Mountain Ski Area	7300-8800	S-T-P
6	Ben Lomond Peak SCS	8000	S-T-P-WE
7	Ben Lomond Trail SCS	6000	S-T-P-WE
8	Snow Basin Ski Area	6400-8800	S-T-P-B-A
9	Francis Peak Radar	9545	T-A
10	Farlington Upper SCS	8000	S-T-P-WE
11	Parley's Summit SCS	7000	S-T-P-WE
12	Park West Ski Area	6800-9000	S-T-P-B-A
13	Park City Ski Area	6900-9400	S-T-P-B
14	Deer Valley Ski Area	6900-9400	S-T-P-B-A
15	Solitude Ski Area	8500-9700	S-T-P-B-A
16	Brighton Ski Area	8760-9870	S-T-P-B
17	Snowbird Ski Area	8100-11000	S-T-P-B-A
18	Alta Ski Area	8550-10550	S-T-P-B-A
19	Timpanogos Divide SCS	8140	S-T-P-WE
20	Sundance Ski Area	6100-7800	S-T-P-B-A

*S=Snowstakes
 T=Thermometers
 P=Precipitation
 B=Barometer
 A=Anemometer
 WE=Water Equivale



Map showing mountainous regions in Utah and UAFC forecast area. The principal UAFC forecast area includes the Northern Wasatch Mountains in an area approximately 30 miles wide and 130 miles long. Avalanche warnings and mountain weather advisories are also issued for other parts of the state when it is known that abnormally hazardous conditions exist in those areas.

3.0 YEARLY SUMMARIES

Avalanche forecasts were first issued by telephone from the Wasatch National Forest Salt Lake District Office in 1976. The original format often included extraneous information pertinent to the Salt Lake District. Documentation of recorded messages exists from 1980-81 to the present. The following summary includes the total number of calls received during the winter months:

1976-77	6,522	
1977-78	11,258	
1978-79	9,924	
1979-80	14,469	
1980-81	30,736	UAFC Established
1981-82	41,610	

3.1 SUMMARY 1980-81

Avalanche Forecasts were issued daily at 8 AM beginning November 7, 1980 and continued through May 3, 1981. The UAFC issued daily forecasts 178 days. A special advisory was issued for hunters october 16-17 due to unusually heavy snowfall.

Nine avalanche warnings were issued during the winter. Warnings were transmitted by NOAA Weather Radio and received adequate coverage from other radio, television and news sources. A ten minute television presentation on the forecasting effort was aired by KSLTV. The Salt Lake Tribune devoted a cover story in the Sunday supplement section. Numerous interviews, talk shows, and speaking engagements were presented by UAFC personnel.

A total of 30,736 calls were received at the Salt Lake location. A daily maximum of 888 calls were received February 1. A monthly summary of calls from the Salt Lake location follows:

November	2,200	
December	4,800	
January	6,257	
February	7,277	(Daily average 175 calls)
March	6,887	
April	3,135	
May	172	

The number and dates of the 1980-81 avalanche warnings are summarized as follows:

9 avalanche warnings were issued during the winter
 32 days when the hazard was high or extreme
 26 days high
 6 days extreme
 17.9% of the 178 day operating season

Group	Warning Dates	Days Warning in Effect
1	Dec. 6	High 1 Day
2	Jan. 28 - Feb. 6	High 5 Days - Extreme 5 Days
3	Feb. 19 - 20	High 2 Days
4	Feb. 26 - Mar. 4	High 7 Days
5	Mar. 17 - 22	High 5 Days - Extreme 1 Day
6	Mar. 27	High 1 Day
7	Mar. 30	High 1 Day
8	Apr. 4 - 5	High 2 Days
9	Apr. 24 - 25	High 2 Days

Warnings Versus Injuries and Fatalities

2/1/81	Ski Touring	Cardiff Fork	Fatality	Warning in Effect
2/21/81	Helicopter skiing	Mineral Fork	Injuries	No Warning Issued
3/1/81	Ski Touring	Mill Creek	Fatality	Warning in Effect

It should be noted that due to the widespread presence of temperature gradient snow and a very weak shearing surface immediately above this bottom layer, a condition of marginal stability existed throughout the entire winter. Avalanches were possible and unpredictable as to which slope in a suspect area would avalanche. As a result, even though the hazard evaluation was moderate, travel was often not recommended.

During the course of the winter, UAFC personnel often intercepted calls normally answered by the recording device. Few of these calls originated outside the local Salt Lake calling radius. Attempts to advertise and solicit calls from the outlying areas had proven unsuccessful. It was felt that a necessary and efficient expansion of the service could be provided at relatively low cost by installing remotely operated telephone recording devices at Provo, Ogden, and Logan. With additional help from the media, the forecast would be available to 85% of the state's population from local sources.

3.2 SUMMARY 1981-82

Avalanche and mountain weather forecasts were issued daily at 8 AM beginning November 1, 1981 and continued through May 14, 1982. The UAFC issued daily forecasts 195 days, a 17 day increase over the preceding season, due primarily to record snowfall and continued skiing interest. Peripheral recording devices were operational in Ogden and Provo November 11 and December 1.

Ten avalanche warnings were issued during the winter. Warnings were transmitted by NOAA Weather Radio and also received wide coverage from radio, television, and newspapers. Media coverage was consistently good. Three 5 minute segments of the forecasting effort were aired by KTVX in conjunction with news broadcasts. Both the Salt Lake Tribune and the Deseret News carried articles about the information service. Numerous interviews were presented by UAFC personnel leading to regular broadcasts in the Park City and Logan areas over KPCW and KUSU radio stations. Group presentations were made to the Wasatch Mountain Club, the Sierra Club, and various other backcountry oriented organizations.

Refinements were made in developing media contacts and in issuing communiques. Forecasts coming directly from the National Weather Service have more impact on the media than those originating from other offices. After the initial yearly promotional requests, media communiques were limited to warnings and subsequent information.

A total of 41,610 calls were received at the three locations. Over 550 calls were received December 28 at the Salt Lake location. Another daily total of over 500 calls occurred February 3. A daily tabulation of calls was not made at either the Ogden or Provo location. A yearly total of the calls received at the Salt Lake, Ogden, and Provo phone numbers follows:

Salt Lake	33,099	(Daily average 170 calls)
Ogden	4,809	(Daily average 26 calls)
Provo	3,702	(Daily average 22 calls)

The call rate fluctuated daily at the Salt Lake location. Once again, a noticeable increase occurred surrounding periods of stormy weather and on weekends. A monthly summary of calls from the Salt Lake area is as follows:

November	1,761
December	6,879
January	8,522
February	5,485
March	6,361
April	3,416
May	675

The number and dates of the 1981-82 avalanche warnings are summarized as follows:

10 avalanche warnings were issued during the winter
 34 days when the hazard was high or extreme
 32 days high
 2 days extreme
 17.4% of the 195 day operating season

Group	Warning Dates	Days Warning in Effect
1	Nov. 18 - 20	High 3 Days
2	Dec. 22 - Jan. 6	High 14 Days - Extreme 2 Days
3	Jan. 21 - 24	High 4 Days
4	Feb. 3 - 4	High 2 Days
5	Feb. 16	High 1 Day
6	Mar. 17	High 1 Day
7	Mar. 19 - 20	High 2 Days
8	Mar. 29 - 30	High 2 Days
9	Apr. 1	High 1 Day
10	Apr. 11 - 12	High 2 Days

Warnings Versus Injuries and Fatalities

3/22/82	Ski Touring	Murdock Peak Area	Fatality	No Warning Issued
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The Wasatch Mountain snowpack often contrasts yearly. Generally this year's snowpack was much more stable than the snowpack of last year. Storms occurring late in October and November were followed by extended periods of high pressure. The resulting temperature gradient condition was virtually eliminated by record snowfall and an inevitable avalanche cycle during late December and early January. The mid-winter through spring snowpack held few surprises. Weak upper level temperature gradient and surface hoar layers were easy to assess in view of new snow and wind episodes.

Calls were intercepted again this year to obtain user feedback regarding the information service. While the responses were overwhelmingly positive, two suggestions stand out as additional objectives for next season: earlier availability of the forecast, and more frequent updating during stormy periods. With help and cooperation from the mountain observer network it may be possible to air the daily forecast at 7:30 AM with confidence. Scheduling office time focusing on 4 PM updates on Friday and Saturday afternoon and during storm cycles will better serve the needs of the callers. Refinements reducing the cost of the phone system will also be investigated further.

4.0 OPERATIONS

4.1 MOUNTAIN WEATHER REPORTING NETWORK

The most important part of the UAFC program is the mountain weather reporting network. (see Figure 1) Centralized avalanche forecasting depends on accurate and timely reporting of weather and snow observations from mountain locations. Generally, the more observations the better as redundancy increases the reliability of the forecast. Accurate tracking and timing of storm movements, and zoning of problem of areas is possible with a good scattering of reporting stations. It has also been demonstrated that consistent and thorough reporting depends directly on the need for accurate weather forecasts from the National Weather Service.

Rapport and continuous dialog concerning weather and snow observations is essential. Weather and snow terminology are unique languages. Forecasters must often rely on a total picture of conditions as seen and experienced by observers. Previous experience with local snow cover development and weather patterns are important considerations in selecting observers and in weighing information.

During the fall of 1980 efforts were made to contact knowledgeable mountain residents and recreationists with a strong or professional interest in mountain weather. All of the ski areas were asked to participate, and businesses associated

with ski touring, helicopter skiing and mountaineering were contacted. Over 40 people attended an introductory meeting held at the National Weather Service Forecast Office. An entire day was devoted to explanation of the conceptualized forecasting program, a discussion of the need for the program in terms of public awareness and improvement of mountain weather forecasting, orientation of reporting procedures, and a tour of the facility. Representatives from the ski areas, helicopter skiing operators, touring center personnel and backcountry rescue organizations were in attendance. An informal agreement was reached, and those attending the meeting agreed to participate as volunteer observers.

Until the winter of 1980 the only mountain climatology available for the Wasatch Mountains was from Alta and Brighton. Initial efforts to expand regulary reported mountain weather observations subsequent to the fall meeting were not very effective. One reason for this was the long period of dry weather lasting into January 1981. When snow finally did occur some ground had been lost due to the time lag. By the end of the season communication had been re-established and an effective, though somewhat thin reporting network existed. The 1981-82 season reporting results are more encouraging. All of the ski areas were contacted or reported daily during their operating season. Other contributors frequently called in snow and weather observations. The confidence level of the forecast was significantly improved. More work needs to be done in the development of the reporting network, however the initial momentum has begun.

Weather instrumentation is an expensive and time consuming aspect of accurate weather reporting. The USDA Forest Service has purchased weather instruments located primarily at ski areas to help gather weather data. Cooperative agreements have been obtained designating responsibility for the maintenance and care of these instruments. Some of the ski areas have been understandably reluctant to purchase weather recording equipment, especially wind recording devices. A high incidence of lightning damage or loss and frequently damaging power surges pose a continuous threat to annemometer systems. Standardization and the development

of technical expertise will reduce many of the problems associated with instrumentation. The ski areas are beginning to realize the importance of their contribution to the weather forecasting effort. Gradually, instrumentation is improving at each of the areas. Alternatives to expensive and fragile instruments are being investigated. Responsibility for the acquisition and maintenance of new and existing equipment will eventually fall to the ski areas. It remains to convince some of the areas of the direct benefits they will receive through the purchase of equipment and accurate weather reporting.

Plans are underway for a fall 1982 meeting to be held in conjunction with the Blaster's School that will include a UAFC progress report involving the mountain weather reporting network. It will be demonstrated that the program has improved mountain weather forecasting. Additional efforts to increase the number of participants and broaden the scope of observations being reported are being continually examined.

Obtaining consistent and reliable weather and snow reports depends on frequent visitation to weather reporting locations and contact with observers. A close working relationship is essential as useable data originates from a mutual understanding of how observations are taken and interpreted. The best results occur when observers receive feedback on collected information. A specially detailed forecast is made available to the observer staff through a recording aired daily from the Salt Lake location at 10 AM. The forecast includes a summary of avalanche control results, incidents, accidents, upcoming events, and a more detailed weather forecast including an estimate of the confidence level of the weather forecast otherwise unavailable to the public. Good results in obtaining weather and snow reports are most evident when the responsibility for calling in these reports is specifically detailed to one or two people and is built into their daily routine. Earlier reporting will result in earlier availability of the forecast, an objective for the 1982-83 season.

4.2 WASATCH OROGRAPHIC MODEL

Forecasting snowfall amounts in the mountains is perhaps the most difficult job of the meteorologist. Snowfall amounts are, of course, critical to planning by highway maintenance crews, snow control personnel, and avalanche forecasters. Meteorologists at the Salt Lake City Weather Forecast Office have developed an orographic precipitation model that forecasts liquid precipitation (water Equivalent). This precipitation is then converted to snowfall using a density equation based on temperature at 10,000 feet (700 Milibars)

$$D = .0785 t + (.00219)(T) + (.00023)(T^2).$$

The original research for the orographic model was done by Barry Nielson as a research assistant at the Alta Avalanche Study Center. Prior to the 1980-81 season a computer program was written based on this research. The program forecasts snowfall on a realtime basis using 700mb (10,000 feet) information and precipitable water. First the orographic lifting is computed by equation (1) $W_m = -g \rho_0 V_0 \frac{H(700)^{2.5}}{(P_0)}$. Then by cross referencing a table with lifting rates and precipitable water a precipitation amount can be found. After the precipitation amount has been determined, a density conversion is used to figure snowfall. The conversion equation used was developed by Owen Rhea and Louis Grant for western Colorado.

The maximum orographic effect is encountered when winds are normal to the orographic barrier. Because the Wasatch Mountains are oriented essentially North to South the maximum lift occurs with a westerly wind. Nielson determined that the windspeed could be used directly for an interval of 240 degrees to 300 degrees, while windspeed for otherly westerly components are determined by equation (2) $V_0 = V_{700} \cos^3/2$

The research for the orographic model was done at Alta by Nielson (Circa 1967). A verification was done based on the 1980-81 snowfall at Alta. Calculations were done for 12 hours periods at 5 a.m. and 5 p.m. during snowfall episodes. The forecast was then compared to the actual amount of snow received. The average error was 3.5 inches. Doing some manipulations with the different cases revealed some deficiencies in the equations. By isolating cases in a northwest flow, the average error jumped

to over 5 inches per event and forecasted amounts were almost always low. When the cases with a northwest flow were removed, the error in the remainder of the cases dropped to 2.8 inches.

Modifications were made in the equations for Park City and Park West mid-year. The model appeared to do well in those areas, however, observations were insufficient to verify its accuracy. It is felt that the Wasatch Orographic Model can be a very useful forecasting tool in predicting snowfall amounts at various locations. Accuracy can often be improved by inputting extrapolated data. Future development and reliability of the orographic model are dependent on accurate reporting of weather data from mountain sites. The model is presently being expanded through the Meteorology Department at the University of Utah.

5.0 CONCLUSION

This report generally summarizes the activities of the UAFC during its first two years of operation, 1980-1982. The report also develops, either directly or indirectly, a series of objectives for future action. Several of these objectives involve the scope and direction that the UAFC should take.

A study of the population trends contained in the 1970 and 1980 census suggests continuing concentration of Utah's population along the Wasatch Front. Presently 85% of the state's population resides within the designated UAFC forecast area. Over 83% of all the registered snowmobiles are located within the forecast area. Utah State and local Forest Service information indicates that snowmobiling and cross-country skiing are local or regional activities not usually involving travel over long distances. This concentration of population and activity supports the present location of the UAFC and the existing forecast area boundaries with the possible exception of expansion to include the Uinta Mountains.

The strongest recommendation for developing UAFC objectives is the expansion of services within the existing forecast area. The installation of an additional

multi-line announcer in Logan will provide recreationists local telephone access to UAFC products. This will also allow for a zoning of local avalanche and mountain weather conditions along the Wasatch Front.

There are four colleges or universities located along the Wasatch Front. In addition to providing participants for recreational pursuits in the Wasatch Mountains, these institutions contain an appropriate setting for studying many aspects of the UAFC program. Formal requests have been made for student assistance for trail surveys and sampling techniques of recreationist involvement in winter sports along the Wasatch Front. It has been suggested that each geography department offer a course in Snow Dynamics that might yield additional volunteerism and resources for the continuation of the UAFC forecasting effort.

A letter has also been sent to William Hurley, Director of Transportation for the State of Utah, requesting a meeting concerning changing Forest Service directives pertaining to avalanche control and forecasting. It has been demonstrated in Washington State that DOT involvement in the centralized avalanche and mountain weather forecasting effort has resulted in considerable cost savings to the transportation department. It is hoped that additional cooperative agreements can be obtained similar to those constituting the Washington/Oregon Avalanche Warning Center.

SLCPRESNW

W0US00 KSLC 010200

THIS IS THE UTAH AVALANCHE FORECAST CENTER REPORTING AT 730 AM MONDAY
JANUARY 31. AVALANCHE INFORMATION FOR THE NORTHERN WASATCH MOUNTAINS.

THE BACKCOUNTRY AVALANCHE HAZARD IS MODERATE ON STEEP UPPER ELEVATION SLOPES. AREAS OF UNSTABLE WINDSLAB EXIST AND AVALANCHES ARE POSSIBLE ON ALL ASPECTS. BACKCOUNTRY TRAVELERS SHOULD USE CAUTION ON STEEP UPPER ELEVATION SLOPES AND GULLIES.

THE WEST SIDE OF THE WASATCH RANGE SOUTH OF OGDEN RECEIVED THE MOST SNOW DURING THE LAST TWO STORMS. SOFT SLAB AND LOOSE SNOW AVALANCHES WERE REPORTED YESTERDAY IN CONJUNCTION WITH CONTROL WORK. CROWN FACES WERE BETWEEN 8 AND 18 INCHES WITH NEW SNOW RUNNING ON THE OLD WINDPACKED SURFACE. SO FAR, THE WEAK UPPER LAYERS OF THE OLD SNOW HAVE NOT BEEN INVOLVED. LOWER LAYER WEAKNESSES ARE STILL A MATTER OF CONCERN AMONG THE SNOW SAFETY COMMUNITY. THE POTENTIAL FOR LOWER LAYER INVOLVEMENT STILL EXISTS, PARTICULARLY ON WEAK WESTERLY ASPECTS.

UP TO 4 INCHES OF SNOW HAVE BEEN REPORTED FROM MOUNTAIN LOCATIONS IN THE PAST 24 HOURS WITH MOST AREAS REPORTING AN INCH TO A TRACE LAST NIGHT. WINDS HAVE BEEN LIGHT WITH TEMPERATURES IN THE MID TEENS OVERNIGHT. LOW CLOUDS AND FOGGY CONDITIONS HAVE CONTRIBUTED TO SETTLEMENT IN THE NEW SNOW. BACKCOUNTRY USERS ARE ENCOURAGED TO SKI CAUTIOUSLY, ONE AT A TIME, AND TO CARRY RESCUE EQUIPMENT AT ALL TIMES.

MOUNTAIN WEATHER FOR THE NORTHERN WASATCH MOUNTAINS.

THERE WILL BE VARIABLE CLOUDINESS TODAY WITH A FEW SNOW FLURRIES POSSIBLE THIS MORNING. LOW CLOUDS AND FOGGY CONDITIONS ARE EXPECTED TO LINGER IN THE CANYONS. WEDNESDAY NIGHT OR THURSDAY. WINDS WILL REMAIN LIGHT AND NORTHWESTERLY AT 5 TO 15 MPH. RIDGETOP WINDS WILL REMAIN LIGHT AND NORTHERLY AT 5 TO 15 MPH. AFTERNOON HIGHS TODAY WILL BE NEAR 30 DEGREES IN AREAS THAT ARE CLEAR. LOWS TONIGHT UNDER CLEAR SKIES WILL AVERAGE 15 DEGREES.

OUR NEXT UPDATE OF AVALANCHE AND MOUNTAIN WEATHER INFORMATION WILL BE AT 730 AM TUESDAY.

MATHIAS ALL LOCATIONS

SLCPRESNW

WOUS00 KSLR 010200

THIS IS THE UTAH AVALANCHE FORECAST CENTER REPORTING AT 500 PM MONDAY
JANUARY 31. AVALANCHE INFORMATION FOR THE NORTHERN WASATCH MOUNTAINS.

THE BACKCOUNTRY AVALANCHE HAZARD IS MODERATE ON STEEP UPPER ELEVATION SLOPES. AREAS OF UNSTABLE WINDSLAB EXIST AND AVALANCHES ARE POSSIBLE ON ALL ASPECTS. BACKCOUNTRY TRAVELERS SHOULD USE CAUTION ON STEEP UPPER ELEVATION SLOPES AND GULLIES.

NORTHWEST THROUGH NORTHEASTERLY ASPECTS WERE WIND LOADED DURING THE LAST TWO STORMS. THE NEW SNOW IS SENSITIVE ESPECIALLY AROUND RIDGECRESTS ON ALL UPPER ELEVATION SLOPES. NATURAL RELEASES OCCURRED DURING THE STORM AND AS RECENTLY AS SUNDAY NIGHT. ADDITIONAL RESULTS HAVE BEEN OBTAINED THROUGH AVALANCHE CONTROL PROCEDURES AT THE RESORTS SUNDAY, AND AGAIN THIS MORNING. RESULTS TODAY WERE MINIMAL. THE NEW SNOW IS DEFINITELY GAINING STRENGTH. SUBSTANTIAL SETTLEMENT HAS BEEN REPORTED. HOWEVER, CAUTION IS STILL ADVISED, ESPECIALLY ON STEEP NORTH EAST, AND WEST EXPOSURES NEAR RIDGELINES. MOST OF THE OBSERVED AVALANCHES BEGAN NEAR RIDGELINES AS LOOSE SNOW SLIDES AND BROKE OUT AS SLABS SLIGHTLY LOWER ON THE SLOPE. A MODERATE HAZARD IS EXPECTED TO EXIST THROUGH TUESDAY. WEAK UPPER LAYERS IN THE OLD SNOW CONTINUE TO RAISE CONCERN. THE NEW SNOW HAS NOT ADDED QUITE ENOUGH WEIGHT TO RELEASE WEAK OLD SNOW LAYERS. TG FORMATIONS EVIDENT IN THE SNOWPACK SUGGEST LOWER LAYER INSTABILITY. SURFACE HOAR IS BEING REPORTED.

MOUNTAIN WEATHER FOR THE NORTHERN WASATCH MOUNTAINS.

THERE WILL BE MOSTLY FAIR SKIES TONIGHT AND TUESDAY. SOME HIGH CLOUDINESS WILL EXIST AS THE HIGH PRESSURE CONTINUES TO DOMINATE A SPLIT FLOW IN THE JETSTREAM. WINDS WILL REMAIN LIGHT AND NORTHWESTERLY AT 5 TO 15 MPH THROUGH TUESDAY. LOW TEMPERATURES TONIGHT WILL BE IN THE MID TEENS WITH HIGHS TOMORROW IN THE MID 30S AT 8000 FEET. THE NEXT CHANCE OF SNOW IS WEDNESDAY NIGHT OR THURSDAY.

OUR NEXT UPDATE OF AVALANCHE AND MOUNTAIN WEATHER INFORMATION WILL BE AT 730 AM TUESDAY.

MATHIAS ALL LOCATIONS