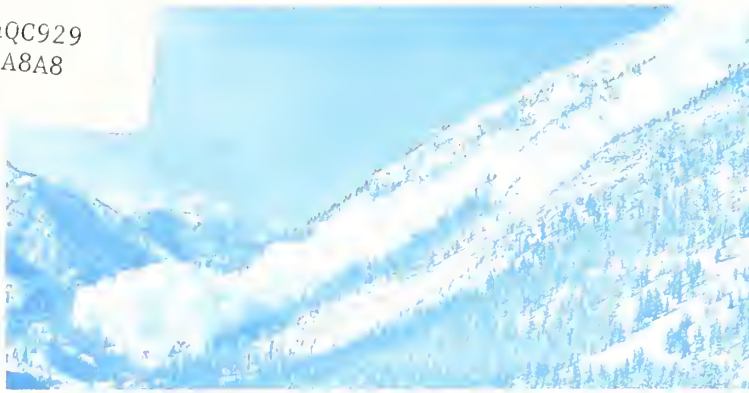


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Avalanche Notes

U.S. Forest Service
Westwide Avalanche Network

November 1990

The first lasting snows in the northern Rockies came right on schedule in early October, followed by an extended Indian summer. When November arrived it brought a thoroughly mixed weather bag to the West, as monthly snowfalls varied from about 50-170% of normal. Here are the regional summaries:

Much of Alaska experienced the coldest November of record. Though the snow cover was generally shallow, the cold led to an extra early sea ice and river ice pack. Alyeska, AK recorded only 40" of snowfall, but reported 10 nights of below zero temperatures, unusual for November.

The Cascades of Washington and Oregon established a lasting snow cover only above 5,000' elevation. At lower elevations, periodic rains wiped out any snowpack that tried to accumulate. The heaviest rains came on the 20th-27th when Crystal Mt. recorded 10.37" and Mt. Rainier-Paradise, 16.77". The precip gage at Alpental recorded 15.37" on the 22nd-25th. The result was devastating flooding in the lowlands of Washington on the weekend after Thanksgiving. For the month, Mt. Rainier recorded 94" of snow, or 97% of normal.

The Sierra of California were left high and dry as the jet stream stayed to the north all month. Alpine Meadows and Squaw Valley saw only three days of snowfall, and wound up with only 45% of normal snows.

The northern Rockies of Montana and Wyoming got near-normal snows, but the Wasatch of Utah did even better. Four good storms came through in November; the heaviest was on the 20th-21st when 26" fell at Snowbird and 31", at Solitude. Snowbird recorded 170% of average.

In Colorado, the northern mountains came up short on snowfall, while the central and southern mountains, boosted by a big storm in early November, were above normal. On the 2nd-7th, Monarch got 30" and Gothic and Wolf Creek both got 43". For the month, Wolf Creek recorded 120% of normal; Monarch, 118%; Gothic, 107%; Berthoud Pass, 66%; and Winter Park, 56%.

Nine avalanche incidents were reported in November; five involved ski patrollers. On the 22nd at Snowbird, a patroller was caught; on the 27th and 28th at Aspen Mt., CO, patrollers were caught; on the 28th at Wolf Creek, a patroller was shallowly and briefly buried without injury. Also on the 28th, two incidents occurred at Taos, NM: first, the snow safety director took a 60-foot ride before grabbing a tree to pull himself out; then a short time later, a skier broke a cornice block which triggered a slab avalanche which caught a skier below. This man was knocked over, lost his equipment, was carried 200' vertical, landed on a catwalk feet first, and was buried to his ears standing straight up.

A fatal avalanche incident -- the first of the season -- occurred on November 7 in the LaPlata Mountains of southwest Colorado. A 22-year-old man, skiing alone during extremely unstable conditions, traversed (on foot) the center of an avalanche slope, triggered an avalanche, and was buried under 2 feet of snow near the toe of the debris. Two days later, a rescue dog alerted on the burial spot and rescuers recovered his body. His skis were strapped to his pack, and one ski tip protruded slightly from the avalanche debris. Bad route selection and too much risk while skiing alone led to an easily preventable death.

On the 25th on Eagle Peak in Chugach State Park, AK, an avalanche swept two climbers off a ledge on which they were bivouaced. They survived this avalanche only to be hit by a second one while looking for lost gear. Then while downclimbing, they triggered a third slide, which they also survived. (So, any volunteers to climb with these guys?)

May - October 1990

On May 22, the body of a 24-year-old man was found in avalanche debris in Logan Canyon, UT. He had last been seen on November 25, 1989 when he left on a solo ski tour. A large storm buried any evidence of his route; thus he was missing all winter. The medical examiner ruled death by asphyxiation in an avalanche. This fatality brings the 1989-90 toll to 8. (Correct your April 1990 Avalanche Notes to show this.)

Doug Fesler reports of two summer avalanche incidents in Alaska: First, on June 2, a climber on the West Buttress of Denali was carried on short ride without injury. Second, on June 4, a serious accident occurred on Bowl Peak in Chugach State Park. A climber triggered a wet loose slide in a gully which carried him 2,000' and buried him with multiple broken bones and contusions. His partner downclimbed, found part of a pack sticking out of the snow, and uncovered the injured man. He then ran back to camp for emergency gear, and upon returning found the victim totally buried by a second avalanche; only a boot was visible. He again uncovered the victim, who seemed not to be further injured by the second slide. He recovered in the hospital.

The 1990 International Snow Science Workshop was held in Bigfork, MT on October 9-13. It was an outstanding meeting with 375 persons registered and 9 countries represented. Great job, Stan Bones!

U.S. FOREST SERVICE
ALPINE SNOW AND AVALANCHE RESEARCH PROJECT
RM STATION FORT COLLINS, COLO.
NOVEMBER 1990

SUMMARY OF WEATHER AND SNOW CONDITIONS

AREA	SNOWFALL				WATER EQUIVALENT				SNOW DEPTH			TEMPERATURE			WIND SPEED AND DIRECTION							
	TOTAL SNOWFALL IN.	MAX IN 24 HR.	DAYS	PERCENT	TOTAL WATER IN.	MAX IN 24 HR.	DAYS	PERCENT	MAX IN.	DAYS	MIN IN.	AVG IN.	MEAN DEGREES F	MIN DEGREES F	AVG DEGREES F	AVG FOR MO.	6 HOUR PERIODS	HOUR FASTEST	DAYS			
CENTRAL AND SOUTHERN ROCKY MOUNTAINS	25.1	0.7	9	6	1.67	0.55	6	6	13	6	0	6	34.8	21.0	27.9	15.8M	53M	33M	43	290	24	
BEAR LAKE, RMNP, CO	23.0	0.7	7	6	2.09	0.83	3	7	17	28	3	10	33.6	11.0	22.0	19.0M	53M	33M	55	260	20	
GOTHIC, COLO	19.5	0.6	13	3	3.29	0.83	7	3	21	6	0	12	30.5M	9.4M	21.5M	18.9	80	76	55	260	20	
KEYSTONE, COLO	47.5	0.7	11	6	3.18	0.95	6	4	10	27	0	6	37.6	12.0	22.8	18.9	80	76	55	260	20	
MONARCH, COLO	19.2	0.7	11	6	3.18	0.95	6	4	10	27	0	6	37.6	12.0	22.8	18.9	80	76	55	260	20	
WINTER PARK, COLO	71.7	0.8	18	3	5.48	1.50	3	4	10	27	0	6	36.2	17.8	27.0	18.9	80	76	55	260	20	
INTERMOUNTAIN																						
BRIDGER BOWL, MONT	39.5	1.1	12	5	4.32	1.50	5	8	34	30	12	21	33.0	14.0	20.4	21.3M	86M	69M	55	270	23	
SNOWBIRD, UTAH	89.0	0.8	15	27	7.38	1.37	10	8	31	31	1	10	33.0	14.0	20.4	21.3M	81M	67M	55	270	23	
SOLITUDE, UTAH	73.0	0.7	19	21	5.34	1.20	9	4	31	22	1	10	26.1	14.0	20.4	21.3M	81M	67M	55	270	23	
TETON PASS, WYO	52.5	0.8	12	20	4.22	1.12	9	4	31	22	1	10	26.1	14.0	20.4	21.3M	81M	67M	55	270	23	
WEST COAST																						
ALPINE MEADOWS, CAL	16.5	0.14	10	26	2.32	0.99	26	3	12	26	0	2	43.5	28.4	35.9	24.5M	79M	62M	75	180	14	
ALYESKA, ALASKA	39.7	0.05	12	18	2.08	0.72	18	6	49	18	0	36	19.0	8.5	13.0	4.6M	54M	27M	55	110	14	
CRYSTAL MTN, WASH	36.1	0.13	8	10	2.83	0.30	15	3	20	10	0	4	17.0	26.1	32.0	14.7M	54M	27M	55	110	14	
SQUAM VALLEY, CALIF	10.1	0.10	8	26	1.75	0.30	26	3	12	26	0	1	46.3	22.1	34.0	14.7M	54M	27M	55	110	14	

-- DATA INCOMPLETE OR MISSING
M--ONE OR MORE DAYS OF WIND SPEED MISSING-IF AVERAGE VALUE IS ENTERED, LESS THAN 10 DAYS RECORD IS MISSING
IF M IS ENTERED IN COLUMN, LESS THAN 37 6-HOUR PERIODS ARE MISSING
GE--GREATER THAN OR EQUAL TO

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NOVEMBER 1990
AVALANCHE SUMMARY

AREA	TOTAL AVALANCHES		DATES OF		MAX TIME IN ONE DAY NO.	NUMBER OF DAYS WITH AVALANCHES	TYPE OF AVALANCHE				FRACTURE LINE HEIGHTS IN FEET			VERTICAL DESCENT IN FEET			AVALS ACROSS MAJOR ACCESS ROADS NO.	
	THIS MONTH NO.	THIS WINTER NO.	FIRST	LAST			ARTIFICIAL	NATURAL	SLABS	HAZARDS	SOFT	LOOSE	GE 2	GE 4	GE 6	GE 200		GE 500
CENTRAL AND SOUTHERN ROCKY MOUNTAINS																		
ASPEN HIGHLANDS, COLO	2	2	7	9	1	2	0	2	0	0	0	0	0	3	2	0	0	600
ASPEN MOUNTAIN, COLO	3	3	27	28	2	2	0	1	0	0	0	0	0	3	1	0	0	500
BERTHOUD PASS, COLO	3	3	12	12	1	0	0	0	0	0	0	0	0	2	0	0	0	300
BERTHOUD PASS, U.S.-40	1	1	12	12	1	0	0	0	0	0	0	0	0	0	0	0	0	175
COPPER MT, COLO	17	17	5	30	4	1	14	1	1	0	0	1	1	1	5	1	1	900
GOTHIC, COLO	1	1	6	23	2	0	0	0	0	0	0	0	0	0	0	0	0	1200
GONMARCH, COLORADO	1	1	23	23	1	0	0	0	0	0	0	0	0	0	0	0	0	300
MONAMBOAT SPRINGS, CO	2	2	27	28	2	0	2	1	1	0	0	0	0	1	0	0	0	675
STEAMBOAT SPRINGS, CO	18	18	27	28	1	1	0	0	0	0	0	0	0	1	0	0	0	600
TAOS, NEW MEXICO	19	19	3	28	2	1	15	0	1	0	0	0	0	2	1	0	0	300
WOLF CREEK, COLO																		

INTERMOUNTAIN

SNOWBIRD 26 26

WEST COAST

ALYESKA, ALASKA 2 2
CRYSTAL MTN, WASH 18 18
MT. HOOD MEADOWS 28 28

--=DATA INCOMPLETE OR MISSING
GE=GREATER THAN OR EQUAL TO
+=ALSO OCCURRED ON OTHER DATES

TOTAL AVALANCHES REPORTED DAMAGE SUMMARY - THIS WINTER

AREA	THIS MONTH		PEOPLE			VEHICLES		AVALANCHE DAMAGED			
	THIS MONTH	THIS WINTER	C	B	I	K	B	D	BLOGS	LIFTS	MISC
CENTRAL AND SO. ROCKIES	71	71	5	2	0	0	0	0	0	0	0
INTERMOUNTAIN	26	26	0	0	0	0	0	0	0	0	0
WEST COAST	48	48	0	0	0	0	0	0	0	0	0
ALL AREAS	145	145	5	2	0	0	0	0	0	0	0