

Technical Report 95 - 03

December 1995

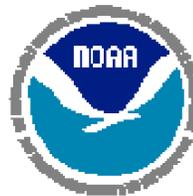
NATIONAL CLIMATIC DATA CENTER
RESEARCH CUSTOMER SERVICE GROUP

WHITE CHRISTMAS?



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INTRODUCTION

Will we have a white Christmas? It's an age-old question that occurs to almost everyone this time of year. The National Climatic Data Center (NCDC) has created a new report which contains updated maps and tables showing the percent probabilities for a snow depth of at least 1 inch on Christmas morning, as well as the probabilities for a depth of at least 5 inches and 10 inches. The "First Order" Summary of Day Dataset for the period of 1961-1990 was used to compute these statistics. Only stations with at least 25 years of data were used and the '61-'90 period was chosen to coincide with the standard period for computing climatological normals.

DISCUSSION

Following is a brief summary of our findings:

Greatest probability for at least 1-inch snow depth (continental U.S.):
100% - Marquette MI
Sault Ste Marie MI
Hibbing MN
International Falls MN
Stampede Pass WA

Greatest probability for at least 5-inch snow depth (continental U.S.):
100% - Stampede Pass WA

Greatest probability for at least 10-inch snow depth (continental U.S.):
96% - Stampede Pass WA

Generally, the greatest probabilities lie where they would be expected--over the northern U.S. and in mountainous areas. In defining a 'white Christmas' as having a snow depth of at least 1 inch, the chances are 60% or better over an area including much of the northern Rockies, the northern Great Plains, the Great Lakes area, and most of New England. The chances are less than 20% over most of the southern third of the country excluding the Rockies, along with the Pacific coast.

The 5 and 10-inch maps (Figures 3-6) indicate areas where there is a greater likelihood of encountering travel problems due to heavy snow. However, keep in mind that this is based on snow depth and not necessarily on newly fallen snow. Also, it is important to remember that higher mountain areas (e.g., elevation of 8000 feet in an area averaging about 4000 feet) will tend to have higher probabilities for each of the 3 categories.

TABLES AND FIGURES

Table 1 presents city-by-city probabilities for at least 1, 5, and 10-inch depths on Christmas morning. Figures 1 through 6 display these probabilities for the continental U.S. in map form with city-by-city plots and with contours at 20 percent intervals.

If you desire further data related to these tables and figures, please contact NCDC (phone 704-271-4800, fax 704-271-4876, internet 'orders@ncdc.noaa.gov'). This report, including images, is also available in color on our WWW homepage (<http://www.ncdc.noaa.gov>).

Table 1

Probability of snow depth on
Christmas Day greater than or
equal to values (in
inches)

shown at top of column

	1	5	10		1	5	10
ALABAMA				ARKANSAS			
ANNISTON	0%	0%	0%	FORT SMITH	10%	0%	0%
BIRMINGHAM	0%	0%	0%	LITTLE ROCK	3%	0%	0%
HUNTSVILLE	3%	0%	0%	CALIFORNIA			
MOBILE	0%	0%	0%	ALAMEDA	0%	0%	0%
MONTGOMERY	0%	0%	0%	BAKERSFIELD	0%	0%	0%
MUSCLE SHOALS	7%	0%	0%	BISHOP	3%	0%	0%
TUSCALOOSA	0%	0%	0%	BLUE CANYON	74%	48%	41%
ALASKA				EUREKA	0%	0%	0%
ADAK	43%	23%	3%	FRESNO	0%	0%	0%
ANCHORAGE	90%	70%	37%	LEMOORE	0%	0%	0%
ANNETTE	17%	10%	0%	LONG BEACH	0%	0%	0%
BARROW	100%	80%	30%	LOS ANGELES	0%	0%	0%
BARTER ISLAND	100%	93%	39%	OXNARD	0%	0%	0%
BETHEL	87%	50%	13%	PASO ROBLES	0%	0%	0%
BETTLES	100%	100%	100%	RED BLUFF	0%	0%	0%
BIG DELTA	97%	57%	23%	SACRAMENTO	0%	0%	0%
COLD BAY	40%	10%	3%	SALINAS	0%	0%	0%
CORDOVA	63%	43%	20%	SAN DIEGO	0%	0%	0%
FAIRBANKS	100%	100%	77%	SAN FRANCISCO	0%	0%	0%
GULKANA	97%	83%	53%	SANTA BARBARA	0%	0%	0%
HOMER	67%	30%	13%	SANTA MARIA	0%	0%	0%
JUNEAU	62%	31%	14%	STOCKTON	0%	0%	0%
KENAI	80%	67%	37%	COLORADO			
KING SALMON	60%	20%	3%	ALAMOSA	60%	10%	0%
KODIAK	20%	0%	0%	DENVER	50%	13%	7%
KOTZEBUE	100%	97%	77%	GRAND JUNCTION	40%	7%	0%
MC GRATH	100%	100%	77%	PUEBLO	28%	3%	0%
NORTHWAY	100%	93%	66%	TRINIDAD	37%	3%	0%
SITKA	27%	10%	3%	CONNECTICUT			
ST PAUL ISLAND	53%	7%	0%	BRIDGEPORT	30%	10%	0%
TALKEETNA	100%	93%	79%	HARTFORD	57%	23%	3%
YAKUTAT	83%	60%	40%	DELAWARE			
ARIZONA				WILMINGTON	13%	3%	3%
FLAGSTAFF	56%	36%	12%	DISTRICT OF COLUMBIA			
PHOENIX	0%	0%	0%				
PRESCOTT	10%	3%	3%				
TUCSON	3%	0%	0%				
WINSLOW	20%	3%	0%				
YUMA	0%	0%	0%				

WASHINGTON	13%	7%	0%	FORT WAYNE	47%	7%	0%
				INDIANAPOLIS	30%	3%	0%
FLORIDA				SOUTH BEND	67%	37%	7%
				WEST LAFAYETTE	24%	8%	4%
APALACHICOLA	0%	0%	0%				
DAYTONA BEACH	0%	0%	0%	IOWA			
FORT MYERS	0%	0%	0%				
JACKSONVILLE	0%	0%	0%	CEDAR RAPIDS	39%	7%	0%
KEY WEST	0%	0%	0%	DES MOINES	50%	17%	7%
MIAMI	0%	0%	0%	DUBUQUE	62%	21%	7%
ORLANDO	0%	0%	0%	MASON CITY	57%	30%	17%
PENSACOLA	0%	0%	0%	SIOUX CITY	63%	13%	7%
TALLAHASSEE	0%	0%	0%	WATERLOO	70%	13%	3%
TAMPA	0%	0%	0%				
WEST PALM BEACH	0%	0%	0%	KANSAS			
GEORGIA				CONCORDIA	24%	3%	3%
				DODGE CITY	27%	0%	0%
ATHENS	0%	0%	0%	GARDEN CITY	25%	0%	0%
ATLANTA	0%	0%	0%	GOODLAND	30%	3%	3%
AUGUSTA	0%	0%	0%	RUSSELL	20%	0%	0%
BRUNSWICK	4%	0%	0%	SALINA	11%	4%	4%
COLUMBUS	0%	0%	0%	TOPEKA	23%	3%	0%
MACON	0%	0%	0%	WICHITA	23%	0%	0%
SAVANNAH	3%	0%	0%				
				KENTUCKY			
HAWAII							
				BOWLING GREEN	14%	3%	0%
HILO	0%	0%	0%	COVINGTON	17%	0%	0%
HONOLULU	0%	0%	0%	LEXINGTON	10%	3%	0%
KAHULUI	0%	0%	0%	LONDON	16%	12%	0%
LIHUE	0%	0%	0%	LOUISVILLE	13%	0%	0%
				PADUCAH	17%	3%	0%
IDAHO							
				LOUISIANA			
BOISE	30%	10%	0%				
BURLEY	38%	3%	3%	BATON ROUGE	0%	0%	0%
IDAHO FALLS	70%	30%	13%	LAFAYETTE	0%	0%	0%
LEWISTON	10%	0%	0%	LAKE CHARLES	0%	0%	0%
POCATELLO	40%	17%	0%	MONROE	4%	0%	0%
				NEW ORLEANS	0%	0%	0%
ILLINOIS				SHREVEPORT	0%	0%	0%
CHICAGO	40%	7%	0%	MAINE			
MOLINE	47%	10%	0%				
PEORIA	40%	10%	0%	AUGUSTA	90%	52%	21%
QUINCY	32%	7%	0%	BRUNSWICK	80%	40%	17%
ROCKFORD	57%	13%	3%	CARIBOU	97%	77%	57%
SPRINGFIELD	33%	7%	0%	HOULTON	96%	74%	52%
				PORTLAND	83%	43%	13%
				MARYLAND			
INDIANA				LEXINGTON PARK	13%	10%	3%
				SALISBURY	14%	3%	0%
EVANSVILLE	13%	3%	0%				

MASSACHUSETTS				MILES CITY	57%	32%	4%
BOSTON	23%	17%	3%	MISSOULA	73%	20%	0%
MILTON	55%	21%	7%	NEBRASKA			
SOUTH WEYMOUTH	33%	13%	10%	GRAND ISLAND	40%	10%	10%
WORCESTER	60%	27%	10%	NORFOLK	57%	17%	7%
MICHIGAN				NORTH PLATTE	33%	10%	0%
ALPENA	83%	47%	13%	OMAHA	44%	8%	4%
DETROIT	50%	13%	0%	SCOTTSBLUFF	47%	3%	0%
FLINT	63%	10%	0%	VALENTINE	61%	14%	4%
GRAND RAPIDS	73%	37%	3%	NEVADA			
HOUGHTON LAKE	82%	56%	0%	ELKO	47%	13%	0%
LANSING	73%	17%	0%	ELY	50%	13%	0%
MARQUETTE	100%	86%	71%	LAS VEGAS	0%	0%	0%
MUSKEGON	70%	37%	13%	RENO	20%	3%	0%
PELLSTON	89%	69%	35%	WINNEMUCCA	37%	3%	0%
SAGINAW	61%	18%	0%	NEW HAMPSHIRE			
SAULT STE MARIE	100%	80%	53%	CONCORD	87%	57%	7%
TRAVERSE CITY	87%	50%	17%	LEBANON	85%	70%	30%
MINNESOTA				MOUNT WASHINGTON	93%	63%	27%
ALEXANDRIA	89%	41%	11%	NEW JERSEY			
DULUTH	97%	63%	43%	ATLANTIC CITY	7%	3%	0%
HIBBING	100%	66%	41%	MILLVILLE	14%	3%	0%
INTERNATIONAL FALLS	100%	73%	53%	NEWARK	23%	10%	0%
MINNEAPOLIS	73%	30%	13%	NEW MEXICO			
REDWOOD FALLS	62%	27%	8%	ALBUQUERQUE	3%	0%	0%
ST CLOUD	73%	37%	10%	CLAYTON	17%	0%	0%
MISSISSIPPI				NEW YORK			
GREENWOOD	3%	0%	0%	ALBANY	63%	30%	13%
JACKSON	0%	0%	0%	BINGHAMTON	67%	43%	17%
MCCOMB	0%	0%	0%	BUFFALO	57%	23%	13%
MERIDIAN	0%	0%	0%	BUFFALO	76%	59%	21%
MISSOURI				GLENS FALLS	77%	47%	23%
CAPE GIRARDEAU	18%	0%	0%	MASSENA	77%	47%	23%
JOPLIN	18%	4%	0%	NEW YORK	10%	7%	0%
SPRINGFIELD	23%	7%	0%	POUGHKEEPSIE	45%	28%	7%
ST LOUIS	23%	3%	0%	ROCHESTER	60%	23%	3%
MONTANA				SYRACUSE	70%	47%	20%
BILLINGS	63%	17%	0%	UTICA	71%	46%	18%
BOZEMAN	73%	17%	3%	WATERTOWN	69%	41%	21%
BUTTE	87%	17%	0%	NORTH CAROLINA			
GLASGOW	77%	30%	0%	ASHEVILLE	7%	0%	0%
GREAT FALLS	57%	17%	3%	CAPE HATTERAS	3%	3%	0%
HAVRE	61%	21%	4%	CHARLOTTE	0%	0%	0%
HELENA	67%	17%	0%	CHERRY POINT	3%	3%	3%
KALISPELL	80%	43%	3%				
LEWISTOWN	76%	32%	12%				

GREENSBORO	10%	0%	0%
HICKORY	3%	0%	0%
JACKSONVILLE	4%	4%	4%
NEW BERN	3%	3%	0%
RALEIGH	3%	0%	0%
WILMINGTON	3%	3%	3%

NORTH DAKOTA

BISMARCK	87%	30%	0%
FARGO	83%	37%	3%
GRAND FORKS	89%	46%	7%
MINOT	79%	32%	14%
WILLISTON	79%	31%	3%

OHIO

AKRON	40%	7%	0%
CINCINNATI	11%	4%	0%
CLEVELAND	50%	17%	0%
COLUMBUS	23%	0%	0%
DAYTON	27%	3%	0%
FINDLAY	41%	0%	0%
MANSFIELD	47%	3%	0%
TOLEDO	57%	3%	0%
YOUNGSTOWN	50%	10%	0%
ZANESVILLE	21%	3%	0%

OKLAHOMA

MCALESTER	4%	0%	0%
OKLAHOMA CITY	3%	0%	0%
TULSA	7%	0%	0%

OREGON

ASTORIA	3%	0%	0%
EUGENE	7%	0%	0%
MEDFORD	3%	0%	0%
NORTH BEND	0%	0%	0%
PENDLETON	13%	7%	0%
PORTLAND	0%	0%	0%
REDMOND	20%	7%	0%
SALEM	3%	0%	0%
SEXTON SUMMIT	44%	33%	7%

PENNSYLVANIA

ALLENTOWN	30%	10%	3%
ALTOONA	31%	3%	0%
BRADFORD	70%	37%	23%
DUBOIS	52%	28%	14%
ERIE	57%	23%	10%
HARRISBURG	33%	10%	3%
PHILADELPHIA	10%	7%	3%
PITTSBURGH	33%	7%	0%
WILKES-BARRE	43%	17%	3%

WILLIAMSPORT	43%	10%	0%
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RHODE ISLAND

PROVIDENCE	37%	10%	0%
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SOUTH CAROLINA

BEAUFORT	3%	0%	0%
CHARLESTON	3%	0%	0%
COLUMBIA	0%	0%	0%
FLORENCE	3%	0%	0%
GREENVILLE	3%	0%	0%

SOUTH DAKOTA

ABERDEEN	59%	19%	0%
HURON	60%	27%	7%
PIERRE	47%	10%	0%
RAPID CITY	47%	7%	0%
SIOUX FALL	67%	27%	7%

TENNESSEE

BRISTOL	17%	3%	0%
CHATTANOOGA	3%	0%	0%
CROSSVILLE	14%	7%	3%
JACKSON	7%	3%	0%
KNOXVILLE	10%	3%	0%
MEMPHIS	7%	3%	3%
NASHVILLE	13%	3%	0%
OAK RIDGE	7%	3%	0%

TEXAS

ABILENE	3%	0%	0%
AMARILLO	7%	0%	0%
AUSTIN	0%	0%	0%
BEEVILLE	0%	0%	0%
BROWNSVILLE	0%	0%	0%
COLLEGE STATION	0%	0%	0%
CORPUS CHRISTI	0%	0%	0%
DALLAS	0%	0%	0%
DEL RIO	0%	0%	0%
EL PASO	0%	0%	0%
GALVESTON	0%	0%	0%
HOUSTON	0%	0%	0%
KINGSVILLE	0%	0%	0%
LUBBOCK	3%	0%	0%
LUFKIN	0%	0%	0%
MCALLEN	0%	0%	0%
MIDLAND	0%	0%	0%
PORT ARTHUR	0%	0%	0%
SAN ANGELO	0%	0%	0%
SAN ANTONIO	0%	0%	0%
VICTORIA	0%	0%	0%
WACO	0%	0%	0%

WICHITA FALLS 3% 0% 0%

UTAH

CEDAR CITY 33% 7% 0%
MILFORD 46% 11% 0%
SALT LAKE CIT 53% 13% 3%

VERMONT

BURLINGTON 77% 50% 13%
MONTPELIER 93% 72% 41%

VIRGINIA

LYNCHBURG 13% 3% 0%
NORFOLK 3% 0% 0%
RICHMOND 7% 0% 0%
ROANOKE 17% 7% 0%
STERLING 17% 10% 0%
VIRGINIA BEACH 0% 0% 0%
WALLOPS ISLAND 16% 0% 0%

WASHINGTON

BELLINGHAM 10% 7% 0%
OLYMPIA 3% 0% 0%
QUILLAYUTE 0% 0% 0%
SEATTLE 7% 0% 0%
SPOKANE 70% 30% 3%
STAMPEDE PASS 100% 100% 96%
WALLA WALLA 17% 3% 0%
WENATCHEE 67% 43% 17%
WHIDBEY ISLAND 7% 0% 0%

WEST VIRGINIA

BECKLEY 36% 7% 4%
BLUEFIELD 24% 10% 0%
CHARLESTON 30% 3% 0%
ELKINS 35% 10% 0%
HUNTINGTON 23% 0% 0%
MARTINSBURG 24% 3% 3%
MORGANTOWN 31% 0% 0%
PARKERSBURG 24% 3% 0%

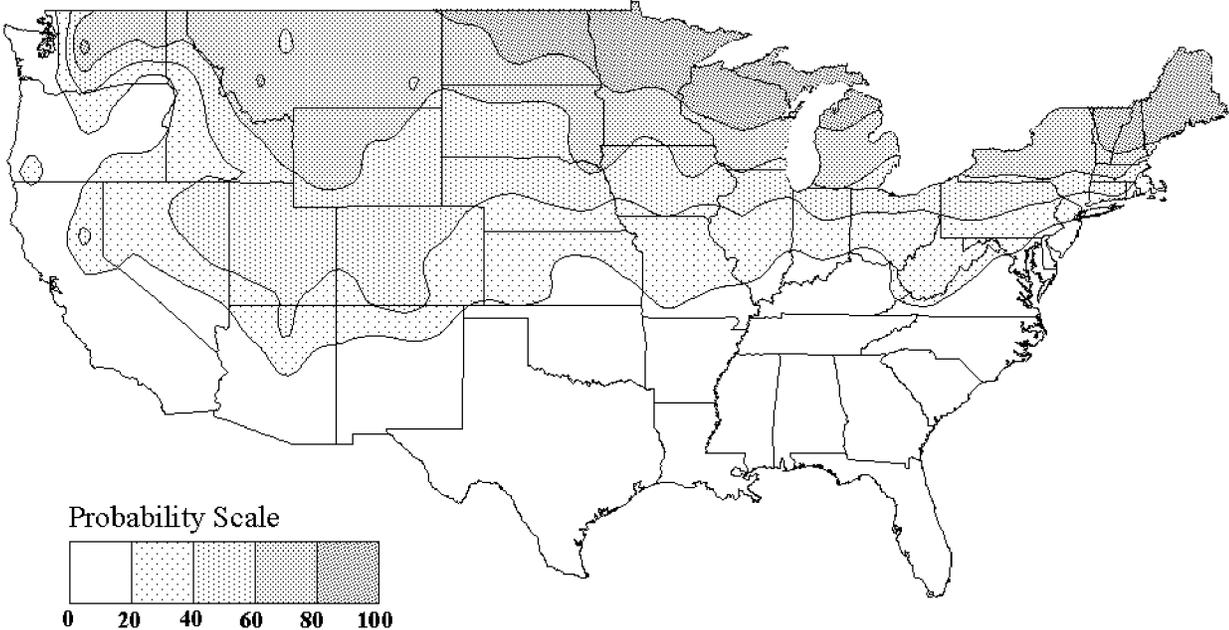
WISCONSIN

EAU CLAIRE 87% 33% 17%
GREEN BAY 77% 40% 3%
LA CROSSE 66% 28% 10%
MADISON 67% 20% 7%
MILWAUKEE 60% 10% 3%
WAUSAU 93% 54% 25%

WYOMING

CASPER 47% 10% 3%
LANDER 77% 37% 17%
LARAMIE 48% 4% 0%
ROCK SPRINGS 55% 10% 3%
SHERIDAN 83% 17% 7%
WORLAND 59% 24% 3%

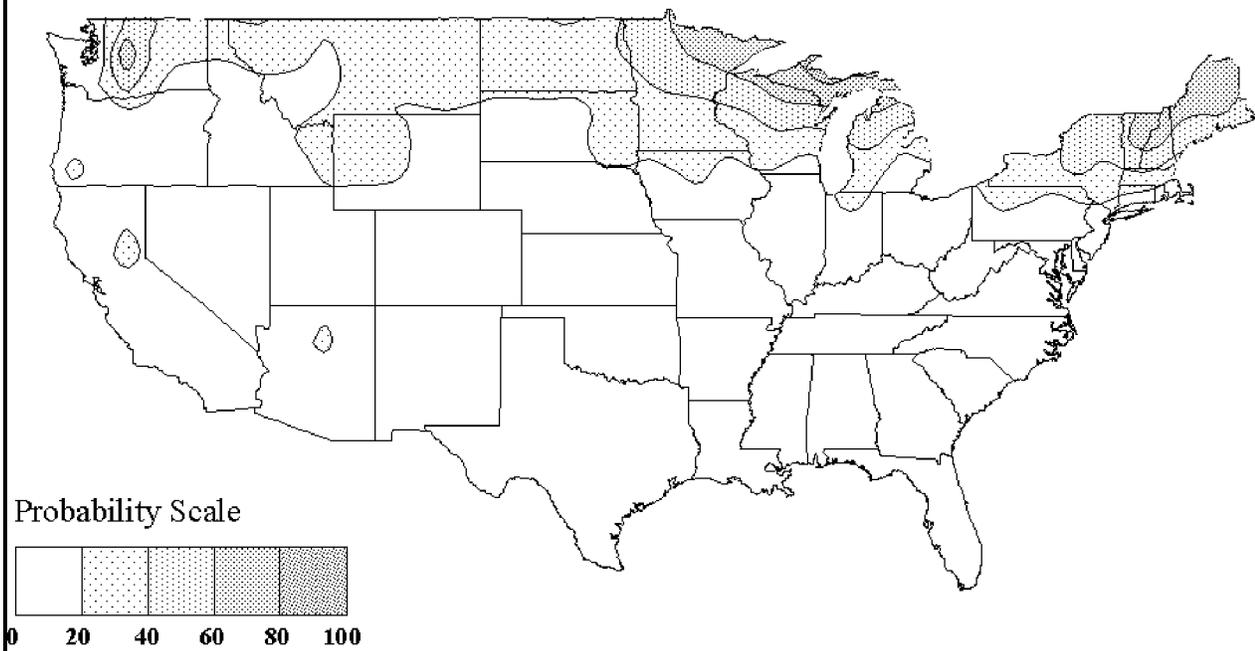
Probability of a White Christmas (snow depth 1" or more)



High mountain areas may have higher probabilities than shown.

Fig. 2.

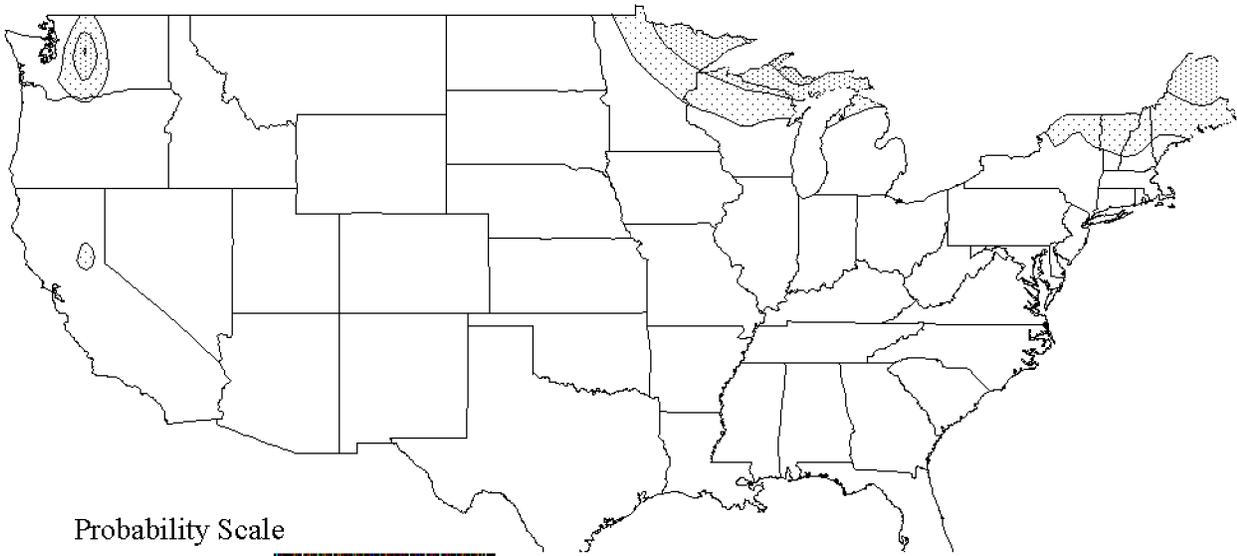
Probability of Snow Depth 5" or more on Christmas Day



High mountain areas may have higher probabilities than shown.

Fig. 4.

Probability of Snow Depth 10" or more on Christmas Day



Probability Scale

