WINTER WEATHER AWARENESS

South Carolina is no stranger to the grip of severe winter weather. Although winter officially runs from around December 21 to March 20, sub-freezing temperature records have occurred in South Carolina in each month except June, July, and August (see chart at right). The advent of the cold season brings the threat of bitter cold and wintry precipitation to South Carolina.

Winter storms that affect the state of South Carolina typically occur because of two specific weather phenomena: cold air damming and nor'easters. Cold air damming is the result of a high pressure system centered over the northeastern United States which provides cold air on the east side of the Appalachian Mountains. While the Appalachians trap cold air over the state, the warm waters of the Gulf Stream only 80 miles offshore provide the energy for rapid and intense cyclone development. The unstable atmosphere provided by the temperature contrast from inland areas to the Gulf Stream assists in generating a nor'easter – so named because of the tendency of the storm to move up the East Coast toward New England with northeast winds approaching 100 mph at times.

Since winter 2002-2003, several memorable ice storms have served as excellent examples of the severe conditions created by cold air damming and nor'easters. On December 4-5, 2002, the Upstate of South Carolina along the I-85 corridor received accumulations of ice ranging from one-half to one and a half inches causing over 300,000 power outages with some homes without power for two weeks. The following winter season on January 24-26, 2004, a major cold air damming event led to several inches of snow and ice in northwest South Carolina. Meanwhile, severe icing hit the central and eastern sections of the state with only Jasper and Beaufort counties missing out on significant wintry precipitation. Again, over 300,000 people were without power throughout the state. The State Climate Office urges the citizens of South Carolina to remember to use caution during the winter months, especially if weather forecasters warn of an impending cold air damming or nor'easter event.

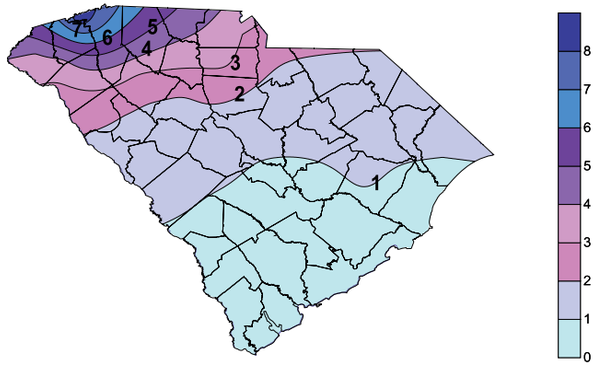
So, where and how often does wintry weather affect South Carolina?

Measurable snowfall occurs from one to three times per year across most of the state with the exception of the Lowcountry. In the Lowcountry, snow is limited to an average occurrence of once every three years. South Carolina has received snow in every month from October through May. To the right is a set of graphics and charts representative of the climatology of snowfall across the state of South Carolina. The greatest 24-hour snowfall totals in the state of South Carolina include 15 inches in the town of Long Creek (Oconee County) in January 1988 and 24 inches in Rimini (Clarendon County) in February 1973. In 1989, snowfall totals ranged from several inches in Charleston to over a foot in Myrtle Beach where 14 inches fell during the event on December 23rd and 24th.

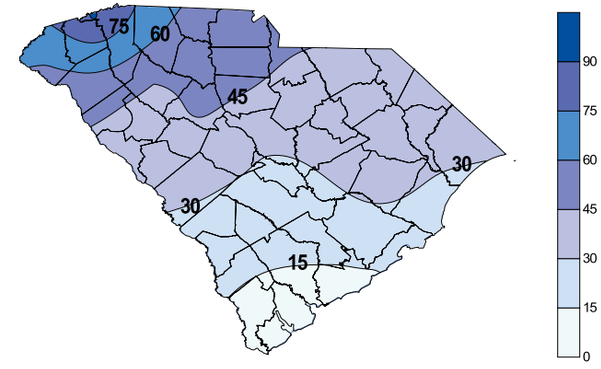
Most frequently, ice storm events occur in Chesterfield County where the average is 3.75 episodes per year. The Lowcountry experiences fewer than 0.75 events per year. January is the month when freezing rain and sleet are the most prevalent with over 1.5 events per year in York, Chester, and Chesterfield counties. The Upper Piedmont and Upstate received up to 3 inches of ice during the February 1996 ice storm. Several hundred thousand power outages and numerous traffic accidents occurred and many homes were damaged or destroyed by falling trees.

Cold air can impose dangerous conditions as well, including wind chill and hypothermia. Wind chill occurs when exposed skin loses heat to the surrounding air as temperature decreases and wind speed increases (see chart lower right). Icy conditions on driveways and walkways are treacherous for travel by foot. Use guardrails and shoe spikes to assist in travel; travel only if *absolutely* necessary. Another, less frequent but equally deadly consequence of winter is ice formation on the surface of ponds. Falling into frigid water quickly induces hypothermia and frequently causes severe injury or death.

South Carolina Average Annual Snowfall
(1948-2003)



South Carolina Snowfall Climatology
Percent Chance of Snowfall Each Year



Monthly Record Low Temperatures (<32 F) for South Carolina

MONTH	TEMPERATURE	YEAR	Location (County)
January	-19 F	1985	Caesars Head (Greenville)
February	-11 F	1899	Santuck (Union)
March	-3 F	1980	Chesnee (Spartanburg)
April	18 F	1944	Caesars Head (Greenville)
May	30 F	1890	Spartanburg (Spartanburg)
June through August	NO TEMPS < 32 F	N/A	N/A
September	30 F	1974	Long Creek (Oconee)
October	16 F	1965	Chester (Chester)
November	-1 F	1950	Caesars Head (Greenville)
December	-10 F	1983	Hogback Mountain (Greenville)

WIND CHILL CONVERSION CHART

Temperature (F)

Wind (mph)	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
Calm																		
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times

30 minutes | 10 minutes | 5 minutes

WINTER WEATHER PREPAREDNESS

The State Climate Office provides a basic set of **Winter Weather Preparedness Rules** for times when power outages occur or travel is made impossible by weather conditions outside the home:

PREPARE . . .

✓**a 3 to 5 day supply** of non-perishable food items, water, and medicine (including a first aid kit).

✓**a supply of heating fuel** (i.e. wood, kerosene), **light sources** (i.e. batteries, flash lights), and **communication equipment** (i.e. radio, television) to stay updated on road and weather conditions.

✓**water pipes** by wrapping them with insulation and leave faucets dripping.

✓**an emergency kit** for your vehicle. Include items such as a first aid kit, flashlight, ice scraper, shovel, tire chains, jumper cables, rope, ice melt/rock salt, blankets, and a change of clothes. Make sure your car is in proper working order before winter weather strikes.

✓**yourself** by dressing in layers and thermally insulated clothing before venturing outside in the cold. PREPARE an alternate plan of action if your home is susceptible to power outages or your area is favored for icy roads (e.g. mountainous regions). Travel to a friend's or relative's home to wait out the storm.