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COLD WEATHER SURVIVAL



Cold weather survival is difficult to define and vary due to the specific circumstances and physical conditions of the person involved. In cold climate areas several factors play a part concerning personal safety.

The commonly called *wind chill factor* is the air temperature felt on the exposed skin due to wind. The human body loses heat through radiation, con-

vection, evaporation and conduction. The rate of heat loss to the exposed surface through convection (heat transfer) depends on the wind speed.

The exposed surface is heated by convection creating an insulating boundary layer of warm air against the exposed surface. Wind speed elevates the loss of the warm air layer giving the perception of lower temperatures and will rapidly increase the risk of frostbite at a rate of wind speed increase. During low temperatures hypothermia and frostbite will result from long exposure to wind on exposed surfaces. The chilling of exposed surfaces will result in the body to begin to restrict blood flow near the surface of the exposed tissue in an attempt to preserve core body temperature. The lack of blood flow to the area will eventually lead to freezing and death of the skin tissue in the affected area.

Hypothermia is the result of exposure to cold conditions on land or in water. Hypothermia can occur when body core temperatures drop from the average of 98.6° to around 95°. Warm dry clothing is required to keep exposed surfaces covered and to keep core temperature normal.

Rear Admiral Sir Francis Beaufort (1774—1857) was the creator of the *Beaufort Scale* for indicating wind force. The first versions were documented during his long career as an officer in Britain's Royal Navy. The content of his charts were

nothing new to seaman but by collecting information over a long period and documenting his findings he succeeded in getting others to adopt it as a standard when there was no existing standard. The Beaufort Scale is the basic measurable evaluation of wind force related to weather conditions.

Beaufort Scale

Beaufort number	Wind Speed (mph)	Seaman's term		Effects on Land
0	Under 1	Calm		Calm; smoke rises vertically.
1	1-3	Light Air		Smoke drift indicates wind direction; vanes do not move.
2	4-7	Light Breeze		Wind felt on face; leaves rustle; vanes begin to move.
3	8-12	Gentle Breeze		Leaves, small twigs in constant motion; light flags extended.
4	13-18	Moderate Breeze		Dust, leaves and loose paper raised up; small branches move.
5	19-24	Fresh Breeze		Small trees begin to sway.
6	25-31	Strong Breeze		Large branches of trees in motion; whistling heard in wires.
7	32-38	Moderate Gale		Whole trees in motion; resistance felt in walking against the wind.
8	39-46	Fresh Gale		Twigs and small branches broken off trees.
9	47-54	Strong Gale		Slight structural damage occurs; slate blown from roofs.
10	55-63	Whole Gale		Seldom experienced on land; trees broken; structural damage occurs.
11	64-72	Storm		Very rarely experienced on land; usually with widespread damage.
12	73 or higher	Hurricane Force		Violence and destruction.

Sportsmen, pilots, sailors, campers, mountain climbers and farmers all have a common interest in the daily and extended forecast of weather conditions.

Weather story

Linnell was camping with her family at a camp ground. About 4 A.M. Linnell woke up every one in her group and said that they needed to pack up quickly because there was a storm coming. As the group finished a hurried pack and were on the way out of the camp a huge storm hit the area. When asked how she recognized the danger she said "The leaves at the top of the cottonwood trees were rustling and that is not normal for that time of the night".

Warm dry clothing, food, and safety equipment should be tops on your list of survival planning gear where ever you travel, drive, go boating, lake ice fishing or flying. Enjoy the weather and the adventure!