

Blizzards and Lake Effect Snows

Encyclopedia Article

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A blizzard is a severe storm, potentially life threatening, caused by wind-driven snow. Although many blizzards involve heavy snow falls, smaller snow amounts may still be driven to blizzard conditions of low visibility and extreme **wind chill**.

The United States National **Weather** Service (NWS) takes a broader approach to the designation of a blizzard. NWS classifies a storm a blizzard if it manifests large amounts of snowfall, or has blowing snow in near gale force winds (generally about 35 mph, or 30 knots) or a combination of **wind** and snow that reduces visibility for more than a few hours. Severe conditions that are not quite blizzard-like are classified as severe winter storms.

Many areas near the **Great Lakes** in the United States and Canada are subject to frequent and severe blizzards due to lake effect snow. Lake effect snow is a meteorological phenomena created by the collision of Arctic cold fronts sweeping generally west to east through Canada and the northern portion of the United States, with the relatively warmer air overlying the Great **Lakes**. Although lake effect snow can occur over any large body of **water** in the world, in **North America** lake effect snows are most frequently associated with the Great Lakes.

The combination of moist, unstable air and arctic cold can produce locally heavy snows—especially on areas immediately east of the advancing cold front. Lake effect snowstorms are unique because they can manifest from otherwise dry cold fronts that produce clear cold weather in other parts of the country. Lake effect snow storms are not associated with advancing cells of low pressure, but rather dense high pressure Arctic cold fronts.

Lake effect snow may contribute to more than half the annual snowfall for some areas on the east or southeast side of the Great Lakes. If winds are light enough to move the falling snow onshore, but not strong enough to blow the developing system over an **area** too quickly, snowfalls measuring 4–6 feet are possible.

Generally, the greater the **temperature** differential between the relatively warmer air over the lake and the advancing cold front, the more pronounced the lake effect snowfall. If the differential is great enough, and the moisture of the rising unstable air high enough, thundersnow may develop (a thunderstorm with snow instead of rain).

See Also

Land and Sea Breezes; Precipitation; Seasons; Weather Forecasting Methods; Weather Forecasting