



# Severe Weather

What Constitutes Severe Weather in Skagit County?

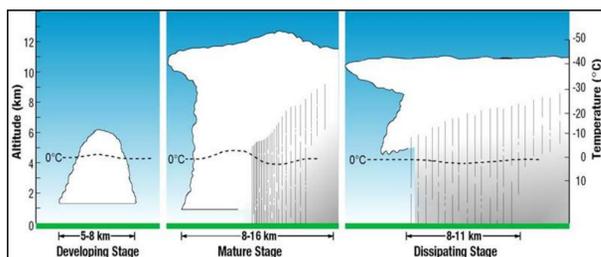
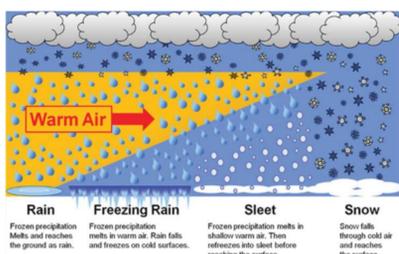


## Hazard Description

Severe weather refers to any dangerous meteorological phenomena with the potential to cause damage, social disruption, or loss of human life.. Severe weather differs from extreme weather, which refers to unusual weather events at the extremes of the historical distribution.

General severe weather covers wide geographic areas; localized severe weather affects more limited areas. The severe weather event that most typically impacts the planning area is a damaging windstorm, which causes storm surges exacerbating coastal erosion. However, the entire County is susceptible to severe weather events.

Types of Precipitation Impacting Skagit County



Life-cycle of Thunderstorm

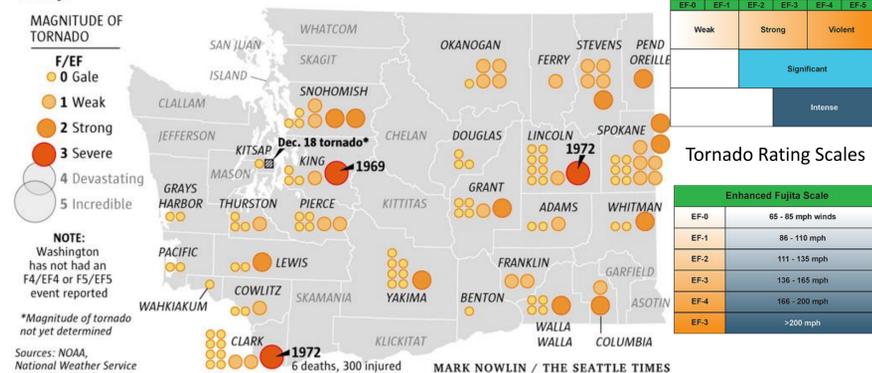
Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81
45	81	82	84	87	89	91	94	97	101	105	109	114	119	124	128	132
50	81	83	85	88	91	95	99	103	108	113	118	124	130	136	141	147
55	81	84	86	89	93	97	101	106	112	117	124	130	136	142	148	154
60	82	84	86	91	95	100	105	110	116	123	129	136	142	148	154	160
65	82	85	89	93	98	103	108	114	121	128	136	142	148	154	160	166
70	83	86	90	95	100	105	110	116	123	130	138	146	154	162	170	178
75	84	88	92	97	103	108	114	121	128	136	144	152	160	168	176	184
80	84	88	92	97	103	108	114	121	128	136	144	152	160	168	176	184
85	84	88	92	97	103	108	114	121	128	136	144	152	160	168	176	184
90	84	88	92	97	103	108	114	121	128	136	144	152	160	168	176	184
95	84	88	92	97	103	108	114	121	128	136	144	152	160	168	176	184
100	84	88	92	97	103	108	114	121	128	136	144	152	160	168	176	184

Wind Speed (mph)	0	5	10	15	20	25	30	35	40
40	30	30	30	30	30	30	30	30	30
35	30	30	30	30	30	30	30	30	30
30	30	30	30	30	30	30	30	30	30
25	30	30	30	30	30	30	30	30	30
20	30	30	30	30	30	30	30	30	30
15	30	30	30	30	30	30	30	30	30
10	30	30	30	30	30	30	30	30	30
5	30	30	30	30	30	30	30	30	30
0	30	30	30	30	30	30	30	30	30
-5	30	30	30	30	30	30	30	30	30
-10	30	30	30	30	30	30	30	30	30
-15	30	30	30	30	30	30	30	30	30
-20	30	30	30	30	30	30	30	30	30
-25	30	30	30	30	30	30	30	30	30
-30	30	30	30	30	30	30	30	30	30
-35	30	30	30	30	30	30	30	30	30
-40	30	30	30	30	30	30	30	30	30
-45	30	30	30	30	30	30	30	30	30

Did you know that heat impacts the young and elderly differently? These two heat indices identify potential risk. The top chart is for adults. The one beneath is for children.

## Tornadoes in Washington state

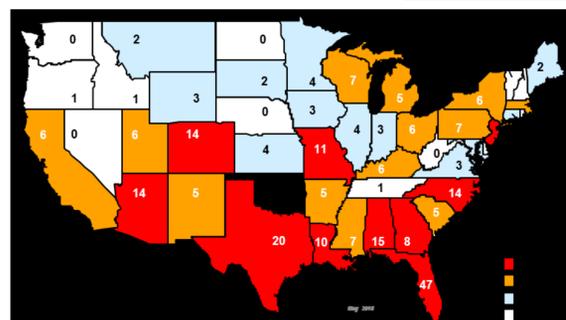
There were 123 tornadoes in Washington from 1950 to 2018. Number and magnitude by county:



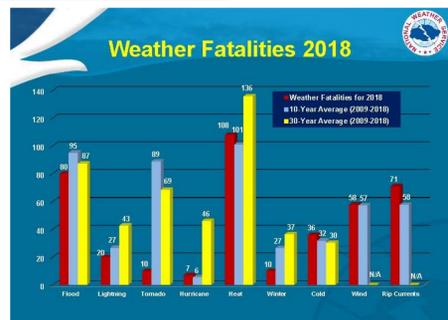
**Fun Fact:** Guess whose childhood home was wrecked by Seattle's first recorded tornado in 1962: Bill Gates, who was 6 at the time. According to the Seattle Times archives, Gates was very concerned about his bicycle. The tornado uprooted trees, throwing a 30-foot tree into a swimming pool, smashed car windows, and ripped roofs off homes. Thankfully, no one was injured.

Wind (mph)	5	10	15	20	25	30	35	40	45
5	36	31	25	19	13	7	1	-5	-11
10	34	27	21	15	9	3	-4	-10	-16
15	32	25	19	13	6	0	-7	-13	-19
20	30	24	17	11	4	-2	-9	-15	-22
25	29	23	16	9	3	-4	-11	-17	-24
30	28	22	15	8	1	-5	-12	-19	-26
35	28	21	14	7	0	-7	-14	-21	-27
40	27	20	13	6	-1	-8	-15	-22	-29
45	26	19	12	5	-2	-9	-16	-23	-30
50	26	19	12	4	-3	-10	-17	-24	-31
55	25	18	11	4	-3	-11	-18	-25	-32
60	25	17	10	3	-4	-11	-19	-26	-33

Wind Chill – Do you know what wind speed and temperature can cause frost bite? A temperature of 5° (F) and a wind speed of 30 mph equals a wind chill of -19, producing frostbite in 30 minutes.



Fatalities Associated with Lightning Strikes



Nationwide Fatalities for Weather Events

## Types of Severe Weather Occurring in Skagit County

**Freezing Rain**—The result of rain occurring when the temperature is below the freezing point. The rain freezes on impact, resulting in a layer of glaze ice up to an inch thick. In a severe ice storm, an evergreen tree 60 feet high and 30 feet wide can be burdened with up to six tons of ice, creating a threat to power and telephone lines and transportation routes.

**Hail Storm**—Any thunderstorm which produces hail that reaches the ground is known as a hailstorm. Hail has a diameter of 0.20 inches or more. Hail is composed of transparent ice or alternating layers of transparent and translucent ice at least 0.04 inches thick. Although the diameter of hail is varied, in the United States, the average observation of damaging hail is between 1 inch and golf ball-sized 1.75 inches. Stones larger than 0.75 inches are usually large enough to cause damage.

**Severe Local Storm**—"Microscale" atmospheric systems, including tornadoes, thunderstorms, windstorms, ice storms and snowstorms. These storms may cause a great deal of destruction and even death, but their impact is generally confined to a small area. Typical impacts are on transportation infrastructure and utilities.

**Thunderstorm**—A storm featuring heavy rains, strong winds, thunder and lightning, typically about 15 miles in diameter and lasting about 30 minutes. Hail and tornadoes are also dangers associated with thunderstorms. Lightning is a serious threat to human life. Heavy rains over a small area in a short time can lead to flash flooding.

**Tornado**— Most tornadoes have wind speeds less than 110 miles per hour are about 250 feet across and travel a few miles before dissipating. The most extreme tornadoes can attain wind speeds of more than 300 miles per hour, stretch more than two miles across, and stay on the ground for dozens of miles. They are measured using the Enhanced Fujita Scale, ranging from EF0 to EF5.

**Windstorm**—A storm featuring violent winds. Southwesterly winds are associated with strong storms moving onto the coast from the Pacific Ocean. Southern winds parallel to the coastal mountains are the strongest and most destructive winds. Windstorms tend to damage ridgelines that face into the winds. See illustrations below of previous wind events to impact the area.

**Winter Storm**—A storm having significant snowfall, ice, and/or freezing rain; the quantity of precipitation varies by elevation.



Previous Historic Windstorms Impacting Skagit County