

Superior Advisory Notes



No. 11

Weather Wisdom of the North Shore

by Bruce H. Munson and Leonard E. Peterson

NORTH SHORE CLIMATE

Minnesota's North Shore receives much of its weather from the northwest through the southwest just as the rest of Minnesota and upper Great Lakes region does. The polar front descends across the upper lakes in the fall and retreats northward again in late spring and early summer. Lake Superior, the largest and coldest of the Great Lakes, has a pronounced impact on the weather in its more immediate region. In fact, it can be said that the lake creates its own weather at times, resulting in a climate on the North Shore which is unique. Generally speaking, the North Shore is warmer in winter and cooler in

summer than areas some distance inland. In spite of the absence in temperature extremes, the North Shore is noted for its frequent and sometimes drastic weather changes.

SPECIAL WARNING

Squalls are a summer weather phenomenon along the North Shore. They arrive suddenly and can be very dangerous for those who go out on the lake. For those on shore but unprepared, it can also be a very

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It's Cooler by the Lake

By Steve Stark

Publisher of the Lake County News-Chronical, Steve Stark, of Two Harbors, has noticed that weather reports for nice weather in northeastern Minnesota often include a familiar qualifier. He immortalized the phrase for his readers in the following poem.

The weatherman on TV news
Said "It's a nifty day
For golfers with their polished clubs
To get outside and play.
Or if you have a mind to work
You might go out and rake.
Two Harborities can stay inside—
"It's cooler by the lake."

The Minneapolis temps are up
It's lush and warm and green.
In Brimson, well, the skies are clear
Ten miles can be seen.
All over Minnesota
The citizens will bake,
For us the caveat is out—
"It's cooler by the lake."

Bermuda shorts are seldom seen
Short sleeves are seldom "in".
With sandals, well, your feet will freeze
It seems we cannot win
'Cause when you know the summer sun
On you will soon forsake,
Take heed because you know by now
"It's cooler by the lake."

Oh, somewhere in this northern land
The sun is shining bright
And children dance and romp and sing
At morning, noon and night
The warmth abounds, the birds all sing
It's good to be awake
There is no joy by Agate Bay
"It's cooler by the lake!"

(Reprinted, with permission, from the Lake County News-Chronicle)

SPRING

Spring is characterized by a rather cool regime. Lake ice is reluctant to give way, often remaining through April and into May. On occasion, it may hold into June. While inland areas experience warm temperatures at times, cool air predominates along the shore. When the ice finally melts, warm air flowing over the cool waters of Lake Superior produces fog. While fog can, and does, occur at anytime when the lake is free of ice, it is more noticeable in May and June. Likewise, May and June have more days with light rain or drizzle.

Spring, in the sense of vegetation growth, is usually delayed for up to two weeks along the shore, as a result of cool air coming off the lake. The transition period from winter to summer is short, due to the delayed onset of warm temperatures.

SUMMER

Summers are generally pleasant and cool along the North Shore with temperatures seldom exceeding 90 degrees. On many days, during the absence of significant pressure systems, air cooled by the lake will create a sea breeze (winds blowing from lake to shore), during much of the afternoon hours, while calm periods are prevalent early in the morning and shortly after sunset. During the night, the wind will reverse itself and blow from land to lake.

Although summers are rather short, they are well suited for many types of recreational activities. During periods of extended warm temperatures many residents from inland areas and larger cities, seek refuge from the heat along the North Shore.

Prevailing winds are from the northeast during June and August and from the west-northwest in July. An average wind speed of 10 to 15 mph during the summer months has made sailing a popular sport in western Lake Superior.

NORTHWEST WIND

Spring — Brings cold weather in the early spring. In the latter part of spring it produces fine, pleasant cool weather. However, passing showers often occur for brief periods in the afternoon with clearing at night.

Summer — Very fine, pleasant, mild weather.

Fall — Very fine, pleasant weather until October. After that, it brings on cold weather. A northwest wind usually dies to calm, and in October and November this brings on the coldest days, usually associated with clear skies.

Winter — Cold weather. A chilling wind when at high velocity. The northwest wind usually dies to a calm, at which time the weather gets the coldest with the clearest skies.

WEST WIND

Spring — Mild, pleasant weather with no rain.

Summer — Mild pleasant weather with no rain.

Fall — Mild, pleasant weather; may last for several days if wind is brisk.

Winter — Mild, pleasant weather. If the west wind blows steadily and vigorous for 12 hours or more, very fine, mild weather is likely to endure for up to several days.

NORTH WIND

Spring — Cold weather, occasionally with passing showers.

Summer — and pleasant.

Fall — Cool and pleasant through October. After October it brings on cold days with fair skies. The north wind may either die or shift. If it dies to a calm, expect very cold weather followed by warming. If it backs to northwest, weather will get colder yet. If it veers to northeast, snow is likely.

Winter — Cold and fair, except for some daytime cloudiness. The north wind may either die or shift. If it dies to calm, expect very cold weather followed by warming. If it backs to northwest, weather will get colder yet. If it veers to northeast snow is in the picture in the cold season.

NORTHEAST WIND

Spring — If the sky is cloudy, expect snow early in the spring or rain later on. If the sky is clear or partly cloudy, cool weather is likely to continue.

Summer — Brings a period of cool, cloudy weather with rain.

Fall — Period of cool, cloudy weather with rains in the early fall, snow starting in October. A sudden shift of the wind to northeast will often be quickly followed by clouds and snow.

Winter — Snow. Often the sky will become cloudy only a few hours after the northeasterly begins and snow will quickly follow the onset of the clouds.

SOUTHEAST WIND

Spring—Increasing cloudiness, warmer, rain. With strong wind, watch for severe storms and strong, shifting winds. With light winds, showers may fall but warm weather may persist.

Summer— Increasing cloudiness, warmer, rain. With strong winds, watch for severe storms and strong, shifting winds. With light winds, showers may fall but warm weather may persist.

Fall—Increasing cloudiness, warmer, rain. With strong winds, watch for severe storms and strong, shifting winds. With light winds, showers may fall but warm weather may persist. In November snow will usually take the place of rain.

Winter—Snow is on the way. SE to NE winds, watch for especially heavy snow. SE to SW winds, fair skies.

SOUTHWEST WIND

Spring —

Summer — Brings hot weather, sometimes lasting for a week.

Fall —

Winter — Brings milder weather, may last for about a week.

FALL

Fall is perhaps the most volatile time of the year along the North Shore. Things begin on a good note; early fall can be the most beautiful time of the year. Lake Superior attains its maximum temperature by early fall and tends to temper the first cold outbreaks of the season, providing an extended autumn. Leaves and vegetation along the North Shore retain their greenery about two weeks beyond that of inland areas.

Early fall is generally a tranquil period with onshore and offshore breezes much as in summer. However, by November the polar front has become pretty well established in its annual trek southward. Low pressure systems form over the southwestern U.S. and central Rocky Mountains and move east or northeast along the polar front toward the Great Lakes region.

On occasion the low pressure system will move northeast across central Wisconsin and into the hub of the upper lakes. This movement often will produce the "nor'easter", a violent northeast wind of gale force which can play havoc with sailing and merchant vessels. As the low moves across into southern Ontario, the wind shifts and the lake is buffeted by strong northwest winds. These storms can be especially ferocious, and are remembered in recent times for the sinking of the *Edmund Fitzgerald* in 1975. By December, the polar front is generally south of the area, however the lake is still unfrozen and may contribute energy to storms moving across it.

WINTER

Winter is notorious in northern Minnesota, mainly due to the extremes in temperature. However, along the North Shore, temperatures of -30 degrees are uncommon, occurring on the average of once in two years. Snowfall generally occurs from November through March and averages around 78 inches per year.

"Lake snows" occur on rare occasions along the North Shore but when they do, the snow may accumulate to 3 feet or more in a day or two. The lake snow is characterized by its dry, fluffy texture. It swirls at the least disturbance, even while walking through it. This type of snow occurs when an extremely cold air mass is centered just north of Lake Superior. Light winds of an east or northeast trajectory flow across the mainly open waters of the lake, while northerly winds are more prevalent along the land areas of the shore. Snow falls in a narrow band in this convergence zone.

While shore ice begins to form in late November and December, significant lake ice does not usually form until well into January, accounting for the more moderate temperatures.

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unpleasant experience. Always keep one eye on the weather, particularly on hot, sticky days. That is when squall lines are most likely to hit.

A squall can be recognized as a line of towering cumulonimbus clouds (thunderheads) on the west or northwest horizon. The first indication of an approaching squall line is the appearance of the top of a thunderhead, a very white cloud composed of ice crystals and often with a flat top. (This is called an "anvil" as it is shaped like a blacksmith's anvil.) As the squall line approaches, the bottom portion of the thunderheads appear, recognized by their dark, ominous appearance with which everyone is familiar.

The heavy rains and strong winds of a squall are capable of overturning a boat or blowing away a poorly staked tent.

To an observer, squalls may often be masked by lower cloud layers and are not always visible. However National Weather Service radar can detect squalls hours before they reach the North Shore. Special Marine Warnings are broadcast on NOAA Weather Radio Station, KIG-64 when squalls approach the lake. Don't take chances. A small investment in a weather radio receiver, or a weather crystal for your scanner (162.55 mega-hertz) is well worth the price.

Suggested Further Reading

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