A Science Service Feature

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? WHY THE WEATHER ?

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WHAT MAKES A WIND ?

Winds are started by differences in air pressure, the air tending to flow from a region of high pressure to one of low pressure. And differences in pressure can usually be traced back to differences in temperature. Cold heavy air tends to push or flow in toward a region of warmer, lighter air. Generally, the greater the contrast in temperature, the greater the difference in pressure and the stronger the wind. In winter, winds are, on the average, of higher velocity than in summer because temperature contrasts between North and South are greater, and highs and lows, in consequence, more vigorous.

On a weather map, the curved lines encircling a "high" or "low" are called "isobars", or lines of equal pressure. On a contour map, the closer the contour lines are, the steeper the mountain side and the faster you will roll down. In somewhat the same way, on a weather map, the closer the isobars the steeper the pressure gradient and the faster the winds. Over a smooth surface, such as water, a given pressure gradient can produce a faster wind than over most land. For instance, when the severe storm of March 31, 1926, was over the Lake region, at Alpena, Michigan, the northeast wind struck the shore with a velocity of 40 miles per hour after crossing Lake Huron, but at Grand Rapids, inland, the wind at the same time was only 12 miles per hour. After crossing Lake Michigan, however, the wind hit Chicago with twice that speed.

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