

A Science Service Feature

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? WHY THE WEATHER ?

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LAKE LEVELS AND GALES

A strong wind blowing across a large lake tends to raise the level of the water along the shore towards which it blows and to lower it on the opposite shore. This piling up of water by a general wind is well shown by simultaneous observations at Buffalo harbor and Amherstburg, Ontario - stations at opposite ends of Lake Erie.

When a storm is approaching, northeast winds cause the water to fall at Buffalo and rise at Amherstburg. As the storm passes and the wind shifts to the southwest, the water levels also shift; now the water rises at Buffalo and falls at Amherstburg. About midway between, however, the level remains constant.

Convergence of shore lines at Buffalo favors the heaping up of water in that harbor and sometimes endangers docks and wharves. On the other hand, low water makes trouble by causing groundings on the shoals at either end of the lake. A northwest wind blows across the lake and causes an oscillation between the Canadian and American shores rather than between the ends of the lake.

During gales numerous strong currents are set up, which are an all too frequent cause of shipwreck. These currents are not always the same for winds of the same direction, for the distribution of atmospheric pressure as well as the wind is a factor in the levels of different parts of a lake and, therefore, in the currents produced. Rarely do two storms have approximately the same pressures and winds.

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