



# THE ATMOSPHERIC RESERVOIR

*Examining the Atmosphere and Atmospheric Resource Management*

## WHY WINTER WINDS?

By Mark D. Schneider

January and February were notably windy across our state with a gust of 73 miles per hour recorded in Minot on January 31! Looking at a chart for nine major reporting sites across North Dakota, approximately half of the days in January and February saw wind gusts in excess of 30 miles per hour (mph), what many consider "windy."

During the winter, North Dakota is oftentimes in the middle of an ongoing battle between high- and low-pressure systems. Alberta Clippers are low pressure systems known for their quick-moving nature and strong winds. They develop in western Canada and move eastward through the northern tier of the U.S. "clipping" the Northern Plains, Midwest, and East Coast. Alberta Clippers are relatively dry and don't normally produce much precipitation. What they lack in precipitation though, is usually made up for in gusty west to northwest winds and colder temperatures.

Air pressure attempts to balance itself out in the atmosphere. This means that air from an area of high pressure will move towards an area of low pressure. On a weather map, strong high- or low-pressure systems have tightly spaced lines of equal pressure associated with them called isobars. These isobars are found either around the outside of a high-pressure system or inside of a low-pressure system. Tightly spaced isobars indicate strong winds, while widely spaced isobars mean light winds. As you've probably guessed Alberta Clippers usually have tightly spaced isobars around their center of low pressure.

Now that spring is here, North Dakota's winds will begin to blow from the south/southeast, because low pressure systems oftentimes develop in eastern Montana and higher pressure from the Central Plains is attempting to equalize the atmosphere. Southerly winds can transport warm, moist air all the way from the Gulf of Mexico northward into Canada and when this occurs, we begin to welcome the start of our growing season!

## NUMBER OF DAYS WITH 30+ MPH PEAK WIND GUSTS

	JANUARY	FEBRUARY
BISMARCK	15	18
DICKINSON	21	19
FARGO	22	19
GARRISON	17	16
GRAND FORKS	20	15
HETTINGER	17	18
JAMESTOWN	19	20
MINOT	20	17
WILLISTON	16	17