

THE ATMOSPHERIC RESERVOIR

Examining the Atmosphere and Atmospheric Resource Management

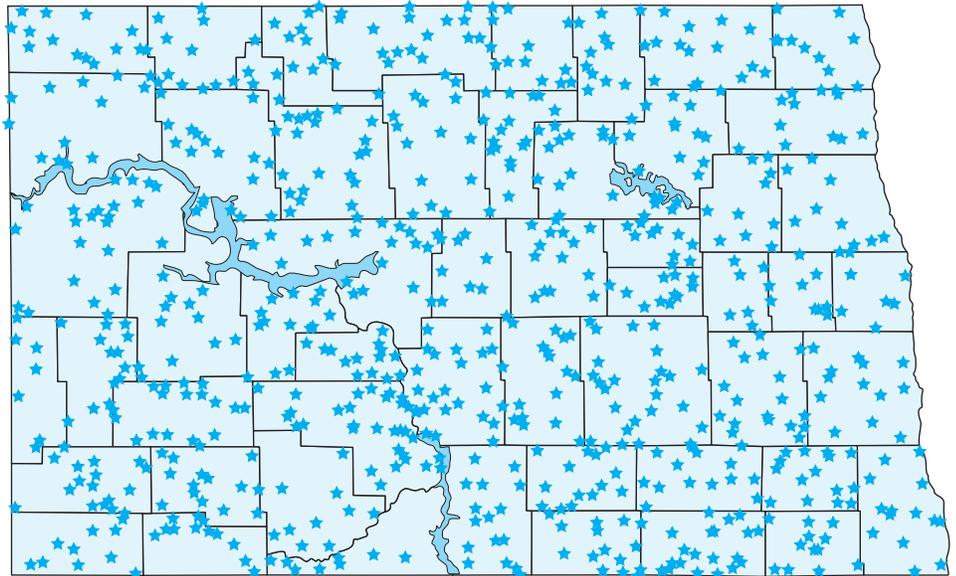
Dakota Volunteers: Valuable Assets

By Aaron Gilstad

It is that time of year once again; nearly 800 volunteers across the state of North Dakota have pulled their rain gauges out of winter storage and started their daily record keeping. The Atmospheric Resource Board Cooperative Observer Network (ARBCON) is already in full swing and our observers are hoping that their second month of this season is snow free. Rain and hail observations are recorded by ARBCON volunteers from April 1 through September 30 and reported at the end of each month. Maps are compiled monthly and a seasonal total map is provided at the end of the season to the volunteers. But, is that all this information used for?

The information provided by these observers is used by a number of local, state, and federal government agencies for a multitude of purposes. Governor John Hoeven and his staff recently used ARBCON maps in a presentation to the Senate Budget Committee for a field hearing on the drought and excess rainfall disasters affecting southwestern and northeastern North Dakota respectively. Companies in the private sector use the data for many reasons as well. Private contractors have used the information in support of contract extensions, due to excessive rain that hindered operations on construction projects.

An addition use, to the aforementioned purposes, of the data is for research. In the year 2000, ARBCON was chosen by the University of Iowa as one of five sites worldwide with a sufficiently dense observer network as to be identified as a "super site." ARBCON data were reviewed for the



2003 Atmospheric Resource Board's COOPERATIVE OBSERVER NETWORK

potential to support testing of satellite based precipitation measurement system. The decision whether the archive was usable or not was based on a comparative analysis of ARBCON data and the official National Weather Service rain gauge data. The comparative analysis of a 23-year period (1977–1999) by the ARB showed exceptional comparability. The comparison showed 99 percent agreement between the two records on both the annual and monthly datasets. This is a testament to the quality of observers and the degree of effort put forth by these volunteers.

In current research applications, the precipitation archive is being used by the University of North Dakota to study the effects of cloud seeding conducted in western North Dakota. The research will focus on the effects of seeding on rainfall in and downwind of the ND Cloud Modification Project target areas. The data is also used by students of all

ages interested in assorted projects related to North Dakota precipitation. Maps created from the archive were recently used by a local high school student for a project on record rainfalls in eastern North Dakota.

One can easily see that ARBCON is a widely used resource. Increased use is expected to continue as knowledge of the database increases and the findings of recent studies are published. The information is provided free-of-charge to the public via the Internet at www.state.swc.state.nd.us/arb or by contacting the ARB at (701)328-2788. If you would like to volunteer, contact us at the phone number below or via email at agilstad@swc.state.nd.us. New volunteers are welcome. ■

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