Precip Data Improved With New Tools

By Mark D. Schneider

The North Dakota Atmospheric Resource Board (NDARB) will have new tools under it's belt before the next growing season is underway. They include precipitation data graphing of Atmospheric Resource Board Cooperative Observer Network (ARBCON) data and upgrades to the NDARB's weather radars in Bowman and Stanley.

The graphing application gives online users the ability to select and observe daily and accumulated AR-BCON precipitation data in graphical form. An average accumulation for that site is also drawn automatically for the selected period of data. In addition, the user can select and display observed accumulations from other years for comparison. An example of this new graphing feature is pictured in this article.

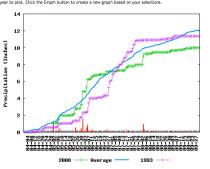
To access the graphing application, go to the SWC website at www.swc.nd.gov, and click on "Map and Data Resources" and then the "Precipitation" link. A Site ID, location, county, or Lat/Long coordinates are then entered, allowing access to archived data. At the top of the query box, a "Graph" link will allow you to use the new graphing application.

You can also access precipitation data through the "MapServices" website at http://mapservice.swc. state.nd.us. A "Help/Demos" button in the upper-left corner of the screen will allow you to view an "Information Tools Demo Video." This

tutorial explains how to select and view precipitation-recording sites. A link to the new "Graph" feature will appear at the top of the query box once a site has been selected.

	Loca	Site ID:88 ation:131-102-11	
County	Bowman	Status	Active
Longitude	-103.40053	Latitude	46.18403
Base Year	Start/End Dates		Additional Years
Graph	April \$ 1 September \$ 30		1991 1992 1993 1994

Select the starting date in the top row and the end date in the 2nd row. Add years to the graph by selecting years in the Additional Years column. Hold down the Control(Win) or Command(Mac) key to select more than one additional year to plot. Click the Graph button to create a new graph based on your selections.



The lines in the graph represent the precipitation accumulated from the chosen start date for the given precipitation site located at T131M R100W Sec. 11. The average plot is the accumulation of the average allay precipitation calculated over the years reported by the given precipitation site. The average plot will only be graphed if there is a minimum of 2 years of reported data. The vertical red bear represent daily precipitation amounts for the selected base year. Missing tick mars on the lines indicate missing

The second significant improvement in precipitation data is an upgrade to the hardware, electronics, and software used with NDARB's WSR-74C weather radars in Bowman and Stanley. These two radars have remained virtually unchanged since their commission in the 1970s and will receive updates next spring, which include digital Doppler receivers, high-sensitivity signal processors, and new antenna control units. The advantages of these new radar technologies include the ability to analyze wind velocity data for increased cloud seeding operations safety and severe wind detection. In addition, improved low-end echo sensitivity will allow the radar

meteorologists to see clouds on their scopes earlier, improving severe storm detection.

NDARB radar data can be found on the SWC website by first clicking on "Atmospheric Resources," then on "Cloud Modification Project" and "Radar Images" from June 1 through August 31 of each year.

New software installed at the Bowman and Stanley radar sites next spring will be capable of mosaicing multiple radar data feeds including National Weather Service data from Bismarck, Minot, Glasgow, and Rapid City. The NDARB shares its radar data with other agencies and the general public and the new software provides for free distribution of radar data to entities that install the software on their computers and request a data feed. An initial test will be used in Bowman County next summer for emergency management purposes and may potentially expand to many other interested counties in North Dakota.

There are many new and exciting tools available in today's technological world that if harnessed can provide a better understanding of our atmosphere and its intricate processes.

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