

## Minnesota State Climatology Office

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The Minnesota State Climatology Office (MN\_SCO) exists to manage, analyze, and disseminate climate information in service to the citizens of Minnesota. The MN\_SCO is funded by the State of Minnesota Department of Natural Resources - Division of Ecological and Water Resources, and housed at the University of Minnesota - Department of Soil, Water, and Climate. This partnership was formed in 1973.

The MN\_SCO assists its customers in their investigations of the climate's impact on various components of the natural environment, and on socioeconomic activities. The MN\_SCO uses its climate monitoring resources to quantify weather conditions and to place these conditions within historical and geographical context. The MN\_SCO also provides quantitative summaries of historical climate conditions, allowing users to make informed decisions about future activities.

In order to provide its services, the MN\_SCO requires an extensive historical climate data set. The climate database managed by the MN\_SCO consists of millions of data points. The database features data collected by Minnesota's high spatial density precipitation monitoring program, formed in the early 1970s. This "network of networks" utilizes the efforts of water-oriented state and local agencies to assemble precipitation data from approximately 1500 observers each year. Additionally, the National Weather Service (formerly the U.S. Weather Bureau) has maintained a large scale, volunteer-based climate monitoring network in Minnesota since 1890. Other, smaller scale climate monitoring efforts extend the historical record earlier into the 19th century. The MN\_SCO also archives multi-element hourly weather data gathered at Minnesota's airports.

The MN\_SCO provides customers with free access to a comprehensive electronic climate database. The MN\_SCO also serves its customers by offering a variety of value-added analyses of climate data in the form of narratives, maps, graphs, and tables. Customers access MN\_SCO products and services via a Web site, email, telephone, office visits, meetings, and public appearances.

The customers of the MN\_SCO are many and varied. Customers can be grouped in the following categories:

- Minnesota Department of Natural Resources (sponsoring agency)
- State, Federal, and Local Governmental Agencies
- Private Sector Professionals
- Academic Community
- General Public

**ARSCO Qualifications:** the MN\_SCO is designated by the AASC as the official state climate office for Minnesota. The following describes the ways in which the MN\_SCO addresses each of the ARSCO qualifications:

***Communication Capabilities:***

- full-featured Web site
- fully staffed information line
- near-immediate response to email inquiries

***Information Services:***

- Web site – the MN\_SCO Web site hosts approximately 3000 users per day. The Web site offers free access to nearly all of Minnesota’s digitized climate data, as well as a number of value-added products such as narratives, maps, and tabular summaries.
- The Web site offers on-line daily data entry and data maintenance capability to volunteer precipitation observers. These near real-time data are automatically transferred to the National Weather Service North Central River Forecast Center.
- Phone and email – the MN\_SCO answers dozens of phone calls and emails per week from customers with climate questions.

***Research:***

- In 2011, the MN\_SCO participated in the establishment of a micrometeorological network of temperature sensors designed to describe the depth and breadth of the Twin Cities heat island.
- The State Climatology Office is a principle member of two advisory committees tasked to provide guidance concerning climate change adaptation research and outreach. Office staff participated in the creation of an agency primer on climate change and renewable energy.

***Outreach:***

- Staff give frequent interviews to electronic and print media.
- Staff are commonly requested to attend multi-agency, multi-disciplinary meetings where a climatological perspective is required.
- Staff make public appearances addressing matters of weather and climate.

***Monitoring and Impact Assessments:***

- The MN\_SCO works with the National Weather Service to coordinate Minnesota’s role in the *CoCoRaHS* program.
- Web site offers a variety of routinely prepared summaries of weekly and monthly temperature, degree day, precipitation, and snow depth data.
- Web site offers a chronological journal of significant weather events, providing a description of the event, impacts, and historical context.
- The MN\_SCO utilizes a list server to deliver a monthly electronic newsletter summarizing climate conditions observed during the previous month and the resulting impact on water resources.
- The MN\_SCO is in frequent communication with authors of the U.S. Drought Monitor.