

## **Types of Climate Data**

For users, climatic data can be complex, confusing, and not always easy to find. What data is available will be determined by whether the station is paid or volunteer, manned or automatic, the specific location, and what equipment is used. Most National Weather Service offices have extensive data that goes back many years. This may include data that for temperature and relative humidity, precipitation, snowfall, snow depth, wind speed and direction, weather types, cloud heights and amounts, visibility, and pressure. In Northeast Montana, Glasgow is the only location that has kept such extensive data, which dates to 1893. Several other locations in Montana have extensive data of that sort too, mostly in the bigger cities. At these stations, data available includes not only daily, monthly, and yearly totals and normals, but often a large amount of data by the hour as well.

A much more common source of climatic data comes from Cooperative stations. These are manned by mainly unpaid volunteer observers, who usually take just basic weather readings just once a day. These are either precipitation only stations, or precipitation along with high and low temperature stations. Snowfall and snow depth data may also be available at these stations. There are also a few stations that have evaporative data, and some stations that read river levels. There are 83 such cooperative stations alone in Northeast Montana, spread out across the area from the larger towns to isolated rural locations. The United States as a whole has about 10,000 such weather stations. The period of record varies greatly, as there are always a few brand new stations and others may go back 100 years or more. Whether normals are available depends on how many years of data are available, 30 years being the standard length of time for climatic normals. These stations in the 12 Northeast Montana counties mail their data to the National Weather Service in Glasgow at the end of the month, where they are then forwarded to the National Climatic Data Center in Asheville, North Carolina. Several stations though, send in their reports daily by phone.

Automated station reports provide another source of climatic data. Some of these are current or former National Weather Service stations, while others are operated and maintained by other federal, state, or local agencies; or private industry or individuals. The amount, type, and reliability of data varies with these, and they are limited to the past 10 to 20 years, due to the relatively new technology of automation of data. Some of this data is considered unofficial and may not be saved or available to all interests.