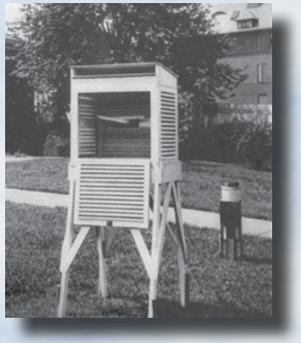
COOPERATIVE WEATHER OBSERVERS:
THE BACKBONE OF CLIMATE RECORDS

The Cooperative Weather Observers Network consists of people from all walks of life. According to the Columbia National Weather Service, in the midlands of South Carolina volunteers include a retired aircraft engineer, an optometrist, water plant, fire department, and radio station personnel, pharmacists, and several women who manage family businesses from their homes.

Nearly 11,000 volunteer cooperative weather observers participate in all 50 states. South Carolina has over 100 observers. The program is a systematic method to provide weather and climatological information to a wide variety of interests. Credit for the earliest practice of written daily weather observations is generally given to John Companius Holms, during the years of 1644 and 1645. Benjamin Franklin is the first person to track an Atlantic hurricane along the eastern coast by using a network of observers. These observers were postmasters and, since Franklin was Postmaster General in 1743, this allowed him to gather the weather reports from along the coast. Thomas Jefferson saw the need for this type of information and helped establish a volunteer system with a local reporting network by 1816. By 1849, Joseph Henry, then secretary of the Smithsonian Institution, increased the observation's network to 150 volunteers.



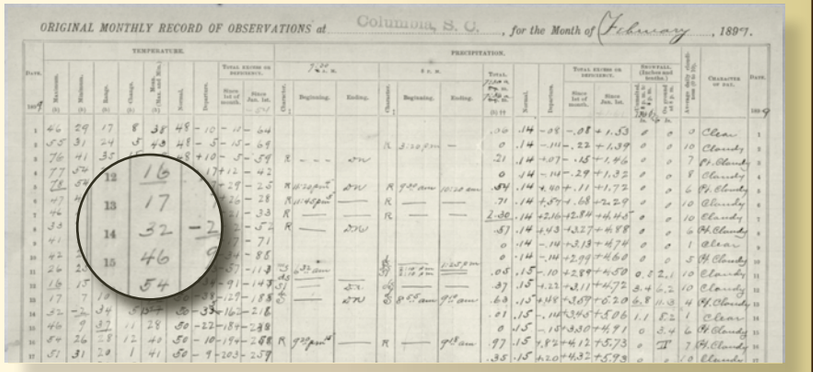
An early weather station with rain gauge and thermometers. Courtesy NOAA's National Weather Service (NWS) Collection.

Entries made daily by the observers included maximum and minimum temperatures, winds, clouds, precipitation and personal or reliable witnessed accounts of atmospheric phenomena. The primary purpose was to define and determine the best use of climate data. Well ahead of the industrial revolution in America, agriculture was the focus of most of the nation's commerce and greatly depended on climate education. The Smithsonian supplied reporting forms and instrumentation necessary for the task. During the 1850s Henry completed an agreement with the telegraph stations to forward weather observations to the nation's larger cities. In 1870, Henry convinced the U.S. Congress to create a law requiring that storm warnings (and subsequent weather forecasts) be the responsibility of the Army Signal Service. By 1890, Congress, being well pleased with the Signal Service's performance, formed the Weather Bureau and suggested a volunteer network be formed of observers every 25 miles for greater accuracy in the monitoring of rainfall. Within its formation was the COOP program under the Organic Act of 1890.

Modern cooperative weather observation station.

Today, weather observations are transmitted to local weather service offices by computer, telephone, and mail. National Weather Service technicians maintain equipment for monitoring sites. Documented observations are forwarded to the National Climatic Data Center in Asheville, N.C. and state climatology offices for permanent archival retention and are available for public reference.

Mr. Edward G. Stoll, who took observations in Nebraska for 76 years, holds the longest record for a volunteer weather observer. In South Carolina, Mr. James Faris of Catawba was honored posthumously for nearly 60 years of weather observing. Mr. Joe Faris, Jr., received the 100 Year Family Heritage Award in 2007.


ORIGINAL MONTHLY RECORD OF OBSERVATIONS at Columbia, S. C., for the Month of February, 1899.

A cooperative weather observer form for Columbia from February 1899. On February 14th the low was minus 2 degrees.

The Cooperative Weather Observer Network of South Carolina

Cooperative weather observers' records and current reports are used for many diverse purposes including:

- Severe weather warnings and preparedness
- Surface and groundwater research and resource planning
- Storm water flooding and pollution mediation
- Agricultural planning
- Soil conditions and land use
- Tourism and quality of life issues
- Engineering and code requirements
- Civil and criminal litigation
- Drought monitoring, assessment, and preparedness
- Tropical cyclone tracking and assessment
- Education