

Community Collaborative Rain and Hail Study (CoCo RaHS): Monitoring Local Precipitation in Colorado

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The Community Collaborative Rain and Hail Study (CoCo RaHS) is a collaborative precipitation-monitoring effort involving the Colorado Climate Center and the CHILL radar facility at Colorado State University, the National Weather Service Forecast Office in Boulder, plus several other federal, state, local, and private organizations that all share an interest in monitoring local precipitation patterns with greater detail and accuracy than ever before.

CoCo RaHS is a low-tech approach to providing high spatial detail. Volunteers of all ages are recruited, trained, and equipped with a year-round rain gauge and devices called "hail pads" to measure the number, size, and hardness of hail stones. Volunteers accurately measure precipitation and report daily via the CoCo RaHS website at: <http://www.cocorahs.org>. Maps of rainfall, snow, and hail are then automatically produced and updated. What began as a network of a few dozen volunteers in northern Colorado in 1998 has now grown to over 800 active observers by spring 2004. Originally focused on Colorado Front Range precipitation, the project is now covering all of Colorado and is also expanding to Wyoming, Nebraska, and Kansas.

Results for 2003 show the incredible impact of the massive Front Range snowstorm of March 17-19, 2003, on seasonal and annual precipitation totals. Also, a small number of other heavy storms were responsible for the majority of the year's moisture. In Fort Collins, for example, four storm systems accounted for 68% of all measurable precipitation in 2003. Examples of individual storms show very clearly that large variations in precipitation over small distances is normal here in Colorado, not the exception. In Boulder, for example, southwestern portions of the city often receive the heaviest precipitation, but exceptions are common. For example, a storm on May 15, 2003, dropped more than 3 inches of rain in a short time just northwest of the city, while rainfall totals over southeast Boulder were very light.