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Colorado Climate Trends Website: A New Tool from the Colorado Climate Center

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In November 2009, the Colorado Climate Center released the Colorado Climate Trends Website (http://climatetrends.colostate.edu/). The website interface allows users to view historic temperature and precipitation data for select weather stations across Colorado. The website was created so that anyone—researchers, resource professionals, the general public—can easily access these data and assess climate trends themselves, without needing an intermediary or interpreter.

The 31 weather stations selected for the website were judged by Colorado Climate Center staff to have the most consistent and

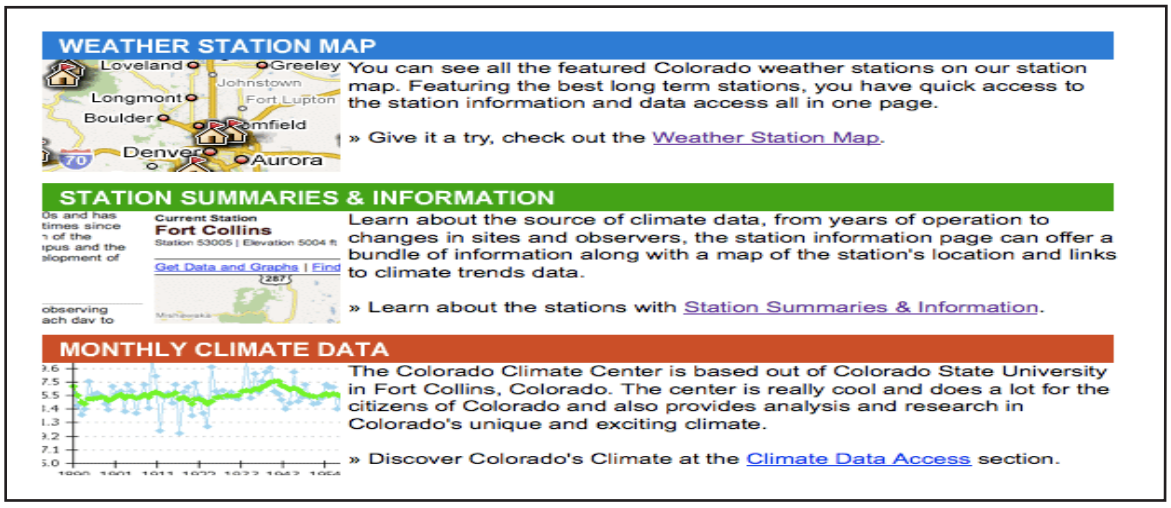

Figure 1: A portion of the Colorado Climate Trends homepage. Information is best accessed through the following links: "Weather Station Map", "Station Summaries & Information", and "Climate Data Access".

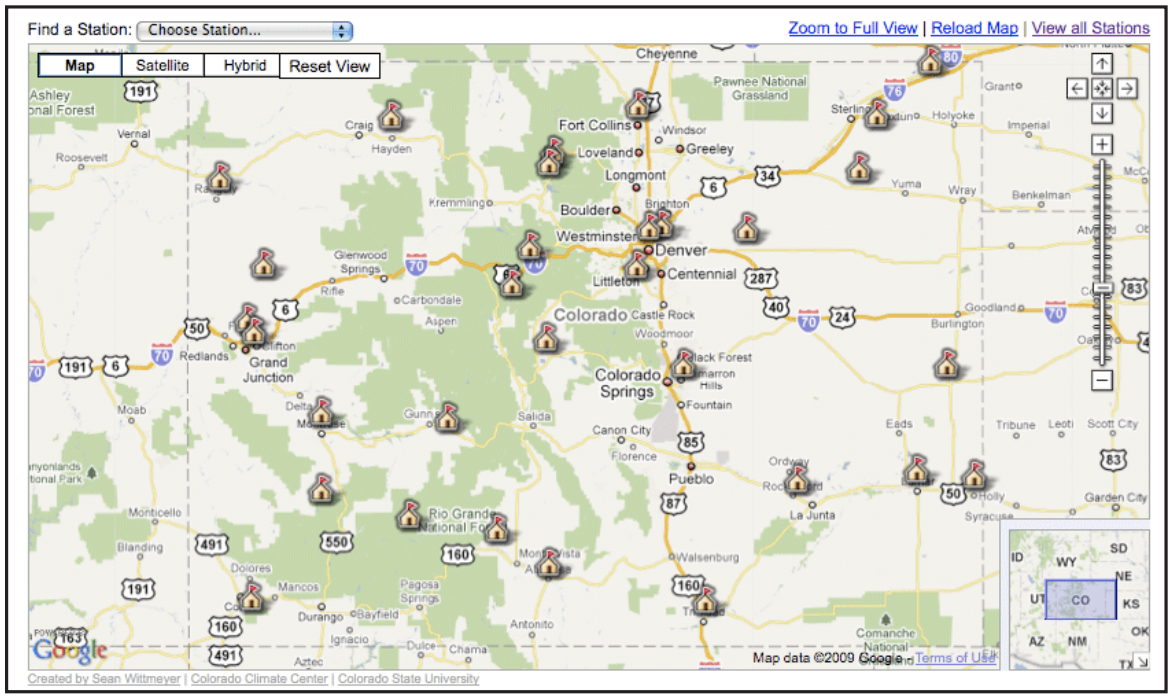

Figure 2: Map of Colorado showing weather stations with the best long-term records of temperature and precipitation.

highest-quality long-term (>60 years) temperature and precipitation records. While there are long weather records for many other sites in Colorado, the selected records are more likely to capture the actual long-term trends in climate across the state.

Users can view and access the data in three different ways through the homepage (Figure 1). The most straightforward approach is to select "Weather Station Map" from the homepage, which leads to a Google map of Colorado (http://climatetrends.colostate.edu/map; Figure 2). The icons on the map show the approximate locations of the weather stations.

When an icon is selected, more information about that station appears in a pop-up box (Figure 3). By selecting the links at the bottom of the pop-up box, specific details about the weather station ("More Information"), as well as the data recorded by the station ("Get Raw Data & Graphical Plots"), can be accessed.

The temperature and precipitation information recorded at a given station can be accessed from the map page using the "Get Raw Data & Graphical Plots" link (shown in Figure 3), or through the station information page (shown in Figure 4) by selecting the "Get Data and Graphs" link. In either case, a data plotting page for that station is displayed, showing a graph of the average annual temperature for the period over which data are available (Figure 5). The average temperature for a given year is displayed by moving the cursor over the line graph.

The drop-down menus on the left side of the page control what the graph shows. Under the heading "Data Type and Time

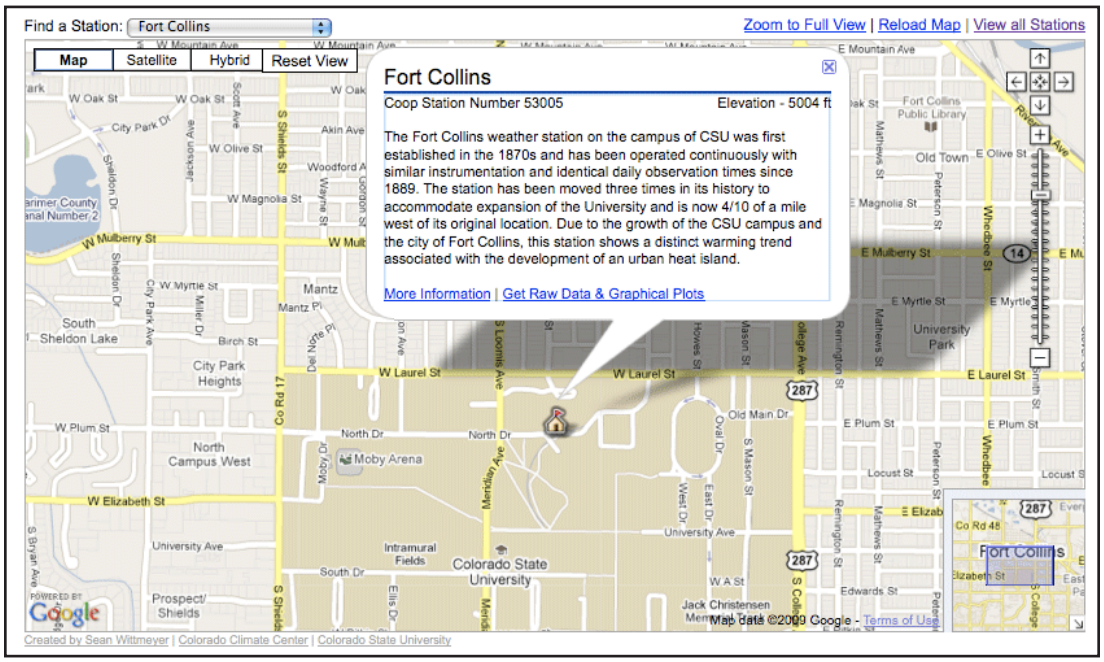

Figure 3: When "More Information" is selected, a new screen appears with details of the station's history displayed alongside a map (Figure 4).

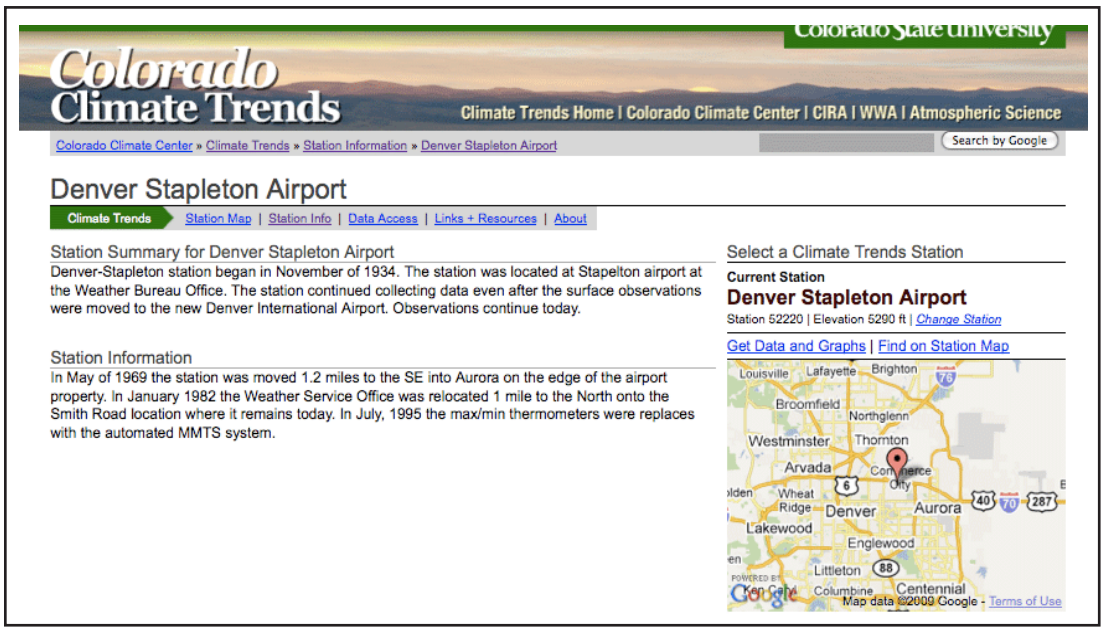

Figure 4: Information displayed for the Denver Stapleton Airport weather station on the Colorado Climate Trends website.

Range", one can change the information displayed (average annual temperature, monthly mean temperature, monthly mean minimum temperature, monthly mean maximum temperature, total monthly precipitation) and set a custom time range. The data frequency can be altered using the "Plot Options" drop-down; here there is a particularly useful feature that allows the water year, rather than calendar year, to be displayed.

Images generated in the window can be downloaded by selecting "Export and Download Chart as JPEG." A print option is also available. More advanced users can download raw data under the "Raw Data Options" menu.

Alternately, the same information can be accessed via the drop-down lists of station history (http://climatetrends.colostate.edu/stations?go=info) and station data (http://climatetrends.colostate.edu/stations?go=ct_access) directly from the links on the homepage (Figure 1), or by using the list of links along the top and bottom of each webpage display.

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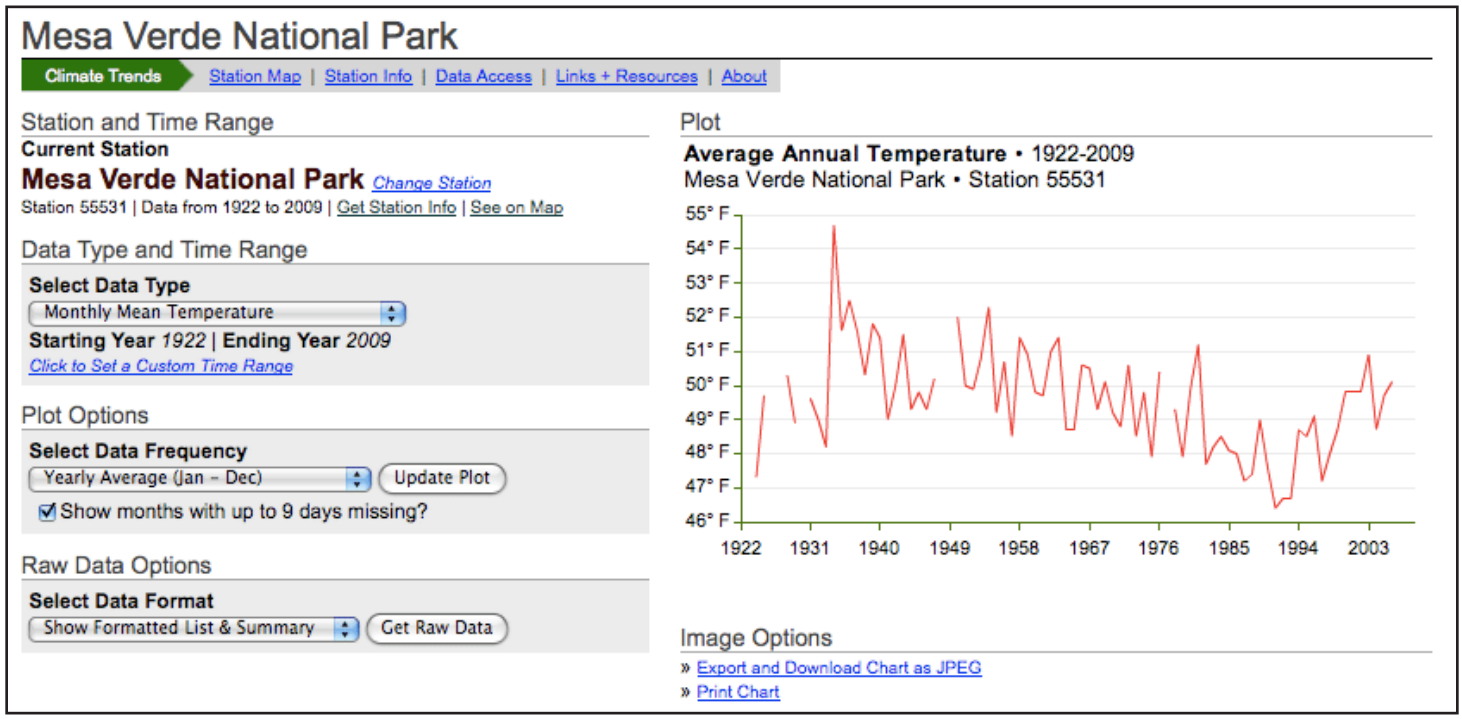

Figure 5: Data plotting page for the Mesa Verde National Park weather station. When a data plotting page for any station is first loaded, a time-series of average annual temperature (red line) appears as the default. The pull-down menus on the left side of the page allow the user to select other data types (e.g., total monthly precipitation) and other averaging periods to plot, as well as downloading of the raw data. The "Image Options" selections in the lower right allow for the downloading and printing of the plot as an image file.