

Are there spurious temperature trends in the United States Climate Division database?

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The United States (U.S.) Climate Division data set is commonly used in applied climatic studies in the United States. The divisional averages are calculated by including all available stations within a division at any given time. The averages are therefore vulnerable to shifts in average station location or elevation over time, which may introduce spurious trends within these data. This paper examines temperature trends within the 15 climate divisions of New England, comparing the NCDC's U.S. Divisional Data to the U.S. Historical Climate Network (USHCN) data. Correlation and multiple regression revealed that shifts in latitude, longitude, and elevation have affected the quality of the NCDC divisional data with respect to the USHCN. As a result, there may be issues with regard to their use in decadal- to century-scale climate change studies.

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