

How We Observe Snow, Winter Weather and Climate Change – A Survey of Northern Colorado

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Abstract. The Front Range of Colorado is a highly populated region with a continental climate, at the interface between the agricultural plains to the east that extend to the Mississippi River and the Rocky Mountains to the west. While many people of the area recreate in the snowy mountains, most live where annual snowfall amounts are low. Snow is a valuable natural resource in this semi-arid landscape for both water supply and the revenue generated from winter recreation. It is also however, the source of large routine cost for snow removal of streets and highways in the populated areas. Weather and climate perception is the process by which society seeks to understand the atmospheric conditions where they live so that they might be able to effectively respond and adapt. Perception of weather and climate can be influenced by direct exposure to those conditions, exposure from a variety of media sources, or cultural and social factors. Existing research has attempted to align perceptions of weather and climate with observed data and has shown that perceptions do not necessarily match observed meteorological data. Through the analysis of two surveys administered to Front Range residents we attempt to 1) understand the perception of snow, winter and hydrologic events, 2) determine how perceptions align with observed meteorological data, and 3) determine how individual characteristics shape perceptions of winter weather and climate. In comparison to meteorological observations, we generally found that most respondents did not have a good understanding of winter conditions regardless of the time they spent recreating in the winter or from the weather data that they regularly accessed. Although the difference was not statistically significant, women had a better understanding of snow, winter weather, and related climate change issues.