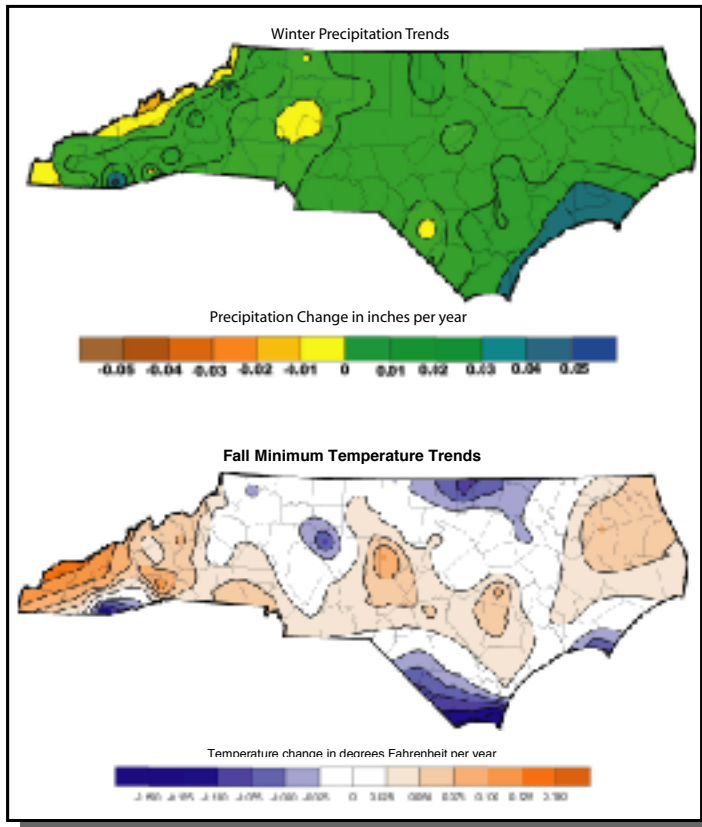
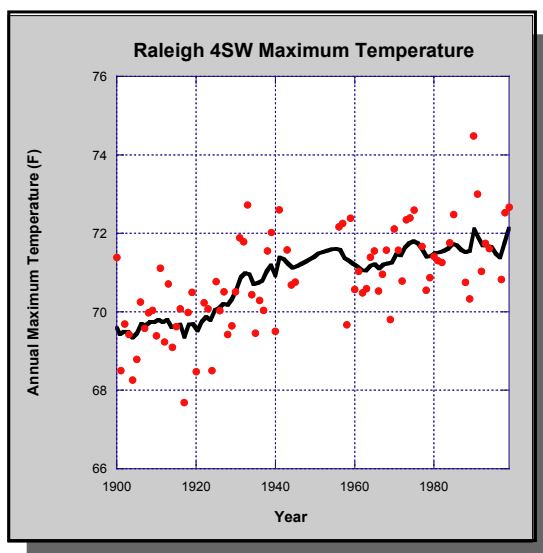


Climate Change and Climate Variability in North Carolina

North Carolina has one of the most *complex* climates in the United States. With the highest peaks of the Appalachian Mountains in the west and the warm waters of the Gulf Stream off our coast, North Carolina experiences almost every kind of weather imaginable. The State Climate Office has always strived to better define and understand the climate factors that impact the people of North Carolina, including how climate varies over space and time.



As part of ongoing efforts to understand climate patterns and trends, the SCO is investigating seasonal climatic shifts as they relate to urbanization, changes in land-use, and other environmental interactions. Precipitation trends suggest an increase in rainfall during the fall and winter. Temperature trends suggest increasing minimum temperatures, especially in urban areas.



Annual average maximum temperatures in Raleigh have increased over the past 100 years by over 2 degrees Fahrenheit. Urban areas seem to be warming while rural areas may actually be cooling.

Recent advances include a better understanding of local climate trends, such as changes in precipitation, air temperature, and occurrences of freezes. Staff and students at the SCO have also recently looked into issues such as urban heating, precipitation and temperature extremes, and how variations in soil temperature and soil moisture affect our atmosphere.

Recent research has increasingly shown that local factors are important in explaining climate change and climate variability. Improved understanding of these factors will assist local communities and policy makers in addressing local and regional issues.

With an increased understanding of how climate and our environment interact, we greatly improve our ability to enhance our way of life in North Carolina. For example, our improved understanding of seasonal climate variability has led to improved management of energy and water resources

