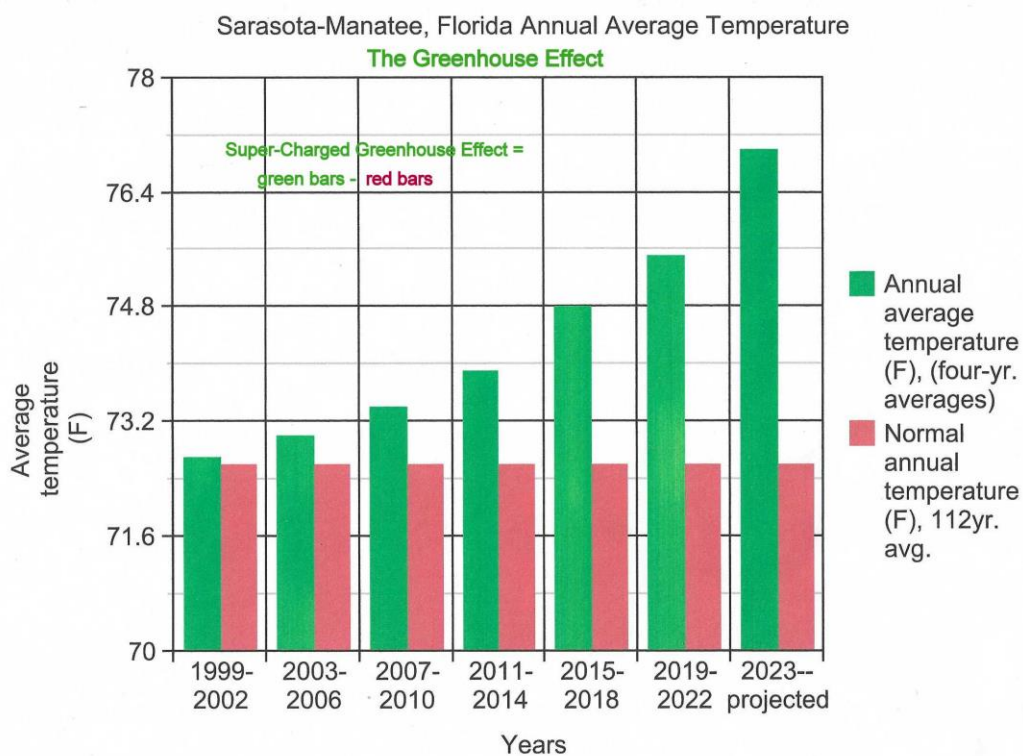


Climate Calamity in Coastal Southwest Florida! – Is the area on a dangerous climate change path?

Is the Southwest Florida region at risk of future climate calamities? Recent studies suggest so. Two risk assessments conducted within the past six years indicate that two counties in particular –Sarasota and Manatee counties -- face significant climate risks. In 2018, Four Twenty Seven, a risk assessment firm, conducted a study that found that both counties are among the most vulnerable to climate change impacts compared to other similarly sized counties nationwide. The study focused on the risks of weather-related events, such as sea level rise, stronger tropical cyclones, extreme rainfall, heat, and water stress. It concluded that the two counties are at high risk.

Four Twenty Seven found that the impact of a changing climate is higher when there is a supercharged greenhouse effect, i.e., a greater than normal concentration of greenhouse gases like carbon dioxide (CO₂) is in the atmosphere. In recent decades, population growth in Sarasota and Manatee counties increased CO₂ emissions significantly, leading to higher impact risks. Anthropogenic activities such as fossil-fuel combustion, deforestation, and concrete production are major contributors to the increased CO₂ emissions.

A 2023 risk assessment study conducted in Sarasota County demonstrates that the climate change risk in both Sarasota and Manatee counties is higher than ever. Between 2010 and 2021, the population in the two counties grew every year, leading to increased traffic (fossil-fuel combustion), new construction (concrete production), and deforestation. The continued acceleration of population growth contributed to record-high global CO₂ concentrations in the atmosphere. Measurement of these concentrations is difficult. Consequently, atmospheric temperature is substituted because it is known to be a reasonable alternative, and easily measured. Recent temperature graphs show increasing temperature as well as evidence of a supercharged greenhouse effect.



The average temperatures shown in the graph were obtained from the National Oceanic and Atmospheric Administration (NOAA) weather link SC ACIS (where the average temperature is the “average” of yearly day and night temperatures). The “normal” average temperature bar (red bar) is an average temperature value for 112 baseline years – the number of years since NOAA temperature measurements began at the Sarasota-Bradenton International Airport. Also, note that the difference between the green and red bar temperatures indicates the presence of a supercharged greenhouse effect.

A risk assessment scale was developed to determine the potential risk that climate calamities may occur in future years. The scale consists of numbers representing the rate of temperature increase (RTI). These numbers were calculated from the graph by determining the ratio of average temperature increase to specific periods. They are essential because they show that the faster the temperature rises, the larger the numeric value and the greater the risk that climate-related disasters may occur. RTI numbers representing three periods are ranked from “low” to “very high” as follows: 6 (1999-2010) was classified as low; 13 (2007-2018) as high; and 20 (2015-2026 projected) as very high.

The RTI numbers, taken in sequence, confirm the assertion that Florida's Southwest coastal region is on a path toward a catastrophic climate future. It is impossible to stop the future from occurring. Still, we can take time to acknowledge what is happening and implement proven methods to decrease, mitigate, and alleviate human activities that cause climate change. A significant step towards mitigation is the recently announced proposal by the Biden-Harris Administration to “draw down” CO₂ from the atmosphere. This will help lessen the impact of climate change in future years.