

# THE ATMOSPHERIC RESERVOIR

*Examining the Atmosphere and Atmospheric Resource Management*

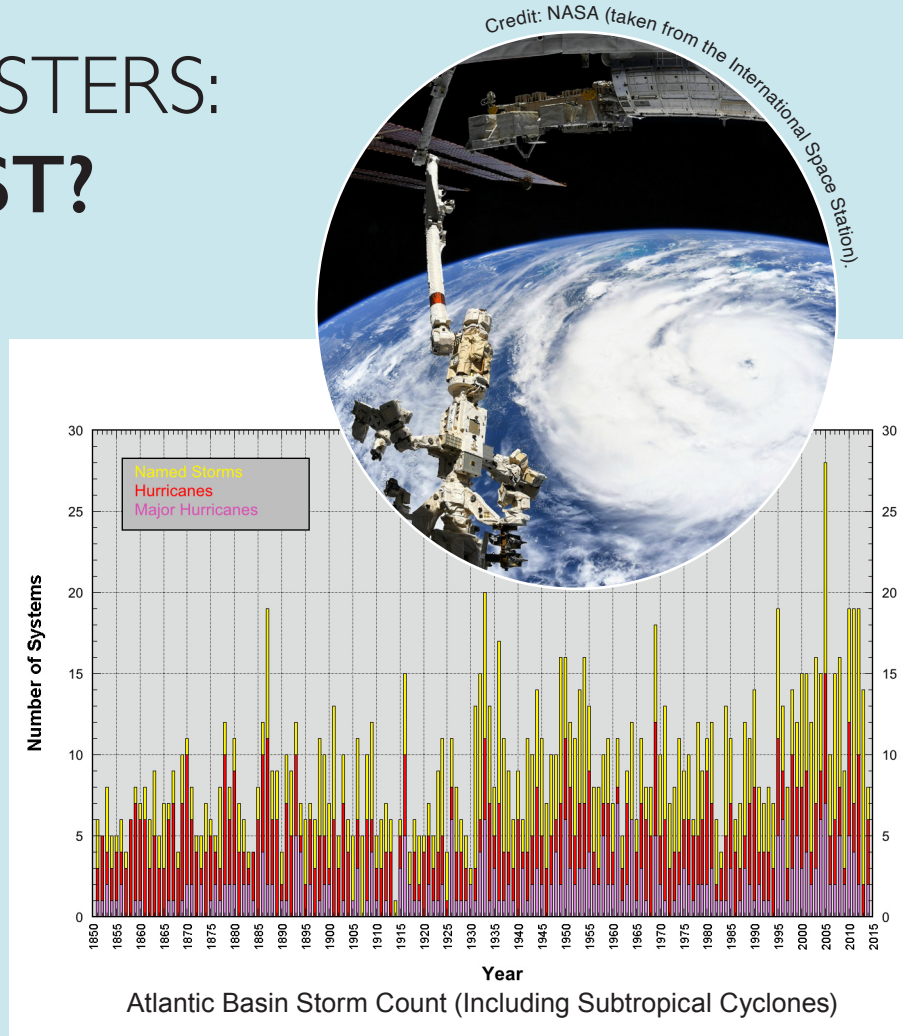
## WEATHER DISASTERS: AT WHAT COST?

By Mark D. Schneider

Globally, we are so much more aware of natural disasters like earthquakes, tsunamis, and hurricanes than we were even 50 years ago, primarily because of communication mediums such as the Internet, television, and radio. The number of fatalities that occur worldwide from natural disasters has decreased by approximately 90% during the last century. In countries with large populations such as India, recent cyclones that would've caused thousands or tens of thousands of fatalities in the past have taken hundreds of lives instead. Warning systems, evacuations, and storm shelters have all played a large part in these reduced fatalities. In addition, the quality of the warning information and speed of dissemination are many times improved. Scientists and emergency managers observe and process real-time weather data in seconds or minutes instead of the hours or days that used to be required.

Besides the cost to human and animal life, there is the obvious monetary cost of damage from natural disasters. Because of inflation and population increases throughout the years, early estimates of Hurricane Ida's damage to Louisiana and the Gulf Coast will likely carry a price tag of \$30 to \$40 billion (on the low end) compared to Hurricane Betsy, which in 1965 caused \$1.4 billion in damage to the same area. No two storms are identical; however, one can see the order of magnitude difference in costs over the years.

An often-asked question is whether our planet is experiencing more frequent weather disasters in recent years than in the past. The answer varies greatly depending on which type of weather disaster occurs and whether its storm track passed through a populated or rural area. Looking at the Atlantic Basin Tropical Storm and Hurricane chart from years 1850 to 2015, one observes an obvious increase in the number of storms throughout this period. We should keep in mind that weather



satellites have only been around since the 1960s and these are essential to identifying and classifying the tropical storms that don't make landfall and aren't directly measurable.

Another interesting example of observed frequency increase in weather disasters would be the U.S. annual number of reported tornadoes. Before the advent of cell phones and dense networks of storm chasers, fewer tornadoes were reported. In recent years, more of the tornadoes that do occur are reported, making the overall frequency appear to increase.

So, rest assured that your National Weather Service and National Hurricane Center are helping to keep you and your property safer than ever before. By utilizing advanced satellite, radar, and weather prediction models and communicating forecasts and warnings effectively to the public, they're "one step ahead of the storm."