Hot nights in the city: New York City's environmental future

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The month of July established a record-breaking heat wave in New York City, as part of hot and humid weather patterns throughout the US, particularly in the Northeast. In New York, there were 11 days that reached a high of 95 degrees or more, the highest number since temperatures were first recorded in 1869. It was also the driest, with only 0.44 inches of rain for the entire month, also the lowest number since 1869, threatening the city with a serious drought. Thirty-three people have died due to unbearable heat and no available air conditioning.

The city experienced a number of power outages, the most serious being the one that took place on July 6 and 7 when 200,000 people in upper Manhattan were without any electricity. Con Edison, the utility supplier, has now been forced to admit that the feeder cables that failed to deliver power to that area had old and antiquated paper-insulated cables with an extraordinarily high history of breakdowns. There were a number of days when power usage approached the maximum amount of power that Con Ed has available, bringing the entire New York metropolitan area perilously close to being without electricity.

The failure of the utility companies to provide proper maintenance and the necessary power is only one side of the equation. The other issue is global warming. Clearly the experience of one month cannot establish a trend. However, a recent report written by the Environmental Defense Fund, an advocacy group, indicates that what happened last month is just a taste of things to come.

The report, entitled "Hot Nights in the City," is based on computer projections of what New York City will look like environmentally in a hundred years, and the results are frightening. The burning of fossil fuels combined with deforestation are the major human activities responsible for global warming, as well as other climatic changes. The burning of substances such as coal and oil produce gases like carbon dioxide (CO_2) that trap heat, which would otherwise escape into space. It is, of course, necessary for human survival that some heat remain on earth, but industrial processes have tipped the ecological balance towards producing extreme heat conditions. One result is the melting of mountain glaciers and the polar ice caps. Sea level, along with the temperature, has been rising globally in the last century.

In New York, the temperature has already increased about 4 degrees Fahrenheit since 1880. This is the result not only of global warming in general, but also what is called the "urban heat-island" effect, in which temperatures rise with urbanization. As a result, it is projected that the temperature in New York will rise 5 to 10 degrees by the year 2100. Summers are predicted to be very hot with nighttime bringing little relief. There will be about 80 days when temperatures will rise over 90 degrees, as compared to the current average of 13. It is projected that the number of days that the temperature at night will be over 75 degrees will be from 28 to 70 days per year, as compared to the current average of less than 5 days per year.

It is anticipated that there will be an increase in heat-related and ozone-related health risks. The elderly and children with respiratory problems are at the greatest risk. People without air conditioning in dense buildings and other places will suffer from heat exhaustion. The report refers the reader to the heat wave in the summer of 1995 in Chicago that caused the deaths of about 500 people.

Ground -level ozone (O_3), the primary constituent of urban smog, reduces lung capacity and increases the chances of mortality from respiratory diseases such as

asthma. The Center for Disease Control and Prevention in Atlanta has stated that asthma attacks have doubled for American children in the last decade. Furthermore, a report just issued by the Mount Sinai School of Medicine has concluded that the poor and minorities in New York City are 21 times more likely to be hospitalized for asthma than the affluent.

Malaria and other infectious diseases carried by mosquitoes may begin to attack New Yorkers. This is because the ability of the mosquito to infect humans increases dramatically in warmer temperatures, which is why this disease has been traditionally been a problem in the tropics.

It is anticipated that the regional sea level will rise anywhere from three-quarters to three and a half feet. The flooding of the city's subways, highways, airports and homes, which now happens about every 13 years, would occur about once a year. This would not only disrupt the transportation infrastructure, but also wreak havoc on the city's sewer system. Coastal areas are expected to experience severe storm floods, eroding the beaches and causing serious property damage. For the same reason, barriers and dikes will have to be built to protect the financial district in lower Manhattan. There will also be an increase of periods of severe drought conditions, and alternate periods of heavy downpours resulting in massive floods.