

Coastal Storms

Dear Reader,

Storms occur wherever two big masses of air meet that have different temperatures. When they collide, enormous amounts of energy are released – often with strong winds, heavy rain or snow, **lightning** and sometimes blinding dust. Storms move materials around the planet and are actually critical events in a healthy ecosystem. A typical summer storm in Boston will bring over 800 million gallons of **freshwater** to the city. This water is a precious resource for all of the plants and animals that live in the region. Even though the humans that live in the city get their drinking water from a **reservoir** 40 miles from Boston, the rainwater is still critical to them as well. Rainwater cleans our air, **humidifies** the soil and washes the landscape. However, in the built environment of a city, the wind and water from storms can sometimes overwhelm us.

No one will soon forget the devastation caused by Hurricane Katrina when it ripped into the Gulf States of Mississippi and Louisiana. New Orleans was hit by a combination of wind, rain, and flooding that left the city in ruins. Billions of dollars and two years later, the city is still struggling to rebuild. When storms hit our cities, we are reminded that the physical forces of the earth are extreme and we can easily be overwhelmed. Perhaps you have never thought that storms are even found on other planets as well. The most famous **planetary** storm is the big red spot on Jupiter, which is actually a hurricane that was first observed by the Italian scientist Galileo Galilei over 300 years ago. The storm itself is larger than the earth and rages across the surface of Jupiter where it reforms the landscape. However, most storms on our planet benefit the local **ecosystem**. The scientific study of storms and weather is called **meteorology**. Understanding storms actually helps us understand our city. By managing for the impacts of storms, the city becomes a much healthier place to live. For example, storm gardens built alongside roads and buildings help to capture the water that runs off of the streets during a heavy rain. Not only does this water **irrigate** the plants and keeps them healthy, but it stays out of the city storm drains where it must be **treated** before it returns to the rivers and ocean.

Learning where storms have their biggest impacts helps us to avoid placing buildings in those locations. Planning for the impacts of storms can lessen their negative impacts. This knowledge will only get more valuable as global warming and climate change present new challenges to urban ecologists in cities everywhere.

Happy Reading,

Dr. Eric Strauss