



WEATHER WATCH

FORECASTING THE WEATHER

by Ellen Labrecque



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CHAPTER 1

WILD WEATHER

Roads were packed with cars. People were told to leave. Weather reports said a **hurricane** was soon going to slam into the coast. Huge wind gusts would wreck houses. High ocean waves would flood streets. As much as 30 inches (76 centimeters) of rain would fall. If people stayed, they would become trapped. But people knew the storm was coming. They could leave the area and get to safety.



When a hurricane is expected, people living along coasts need to move inland to be safe.

Usually we know when bad weather is coming. Millions of lives are saved every year. How is it done? Let's learn how people **forecast**, or predict, the weather.



Extreme winds from hurricanes push water onto land where it floods streets.

FLYING INTO THE STORM

Special airplanes fly into hurricanes. They do this to find out wind speeds and other information. These airplanes can hold up in very strong winds. Pilots say it feels like being on a wicked roller coaster ride.

Weather is one of the most powerful forces on Earth. Lightning storms start fires. **Tornadoes** tear up towns. **Monsoons** cause flooding and mudslides. We need to know when bad weather is coming. We can get ready and be safe.



Tornadoes move quickly along the ground.

The study of weather is called **meteorology**. Meteorology looks at the daily changes that take place in our **atmosphere**. It can be hot and sunny one minute. It can be raining the next. Meteorologists are the people who predict these changes.



To make a forecast, a meteorologist studies weather maps showing current conditions.

Climatology is the study of weather over a longer period of time. Climatologists predict changes in weather patterns for months and years. Humans are causing **climate** change. This is a change in our weather over a long period of time.

Activities such as cutting down trees and driving cars that burn gasoline are bad for the earth. They put **carbon dioxide** into the air. With too much carbon dioxide in the air, climate changes. Storms form more often. They also are **stronger**. Floods and **droughts** are more likely than in the past. Because of climate change, our weather is becoming more extreme. This makes forecasting the weather more important than ever.



Climate change is causing hurricanes to be longer and stronger.



All the carbon dioxide from cars is a big cause of climate change.

FACT

Ice at the poles is melting because of climate change. In turn, melting ice causes oceans to rise. Oceans are expected to rise between 1 and 6 feet (0.3 and 1.8 meters) by 2100.