

Most hurricanes threaten the East Coast and/or Gulf Coast of the United States. With the advent of the Weather Channel, hurricanes have become instant media stars...Bob, Gloria, Andrew to name a few. United States citizens far removed from the East Coast are witness to the unfolding drama.

Modern forecast and satellite technology combined with instant communications, better evacuation techniques and publicity are saving lives. Due to the large concentration of the population along both the east and gulf coast, however, dollar costs of hurricane damage continues to rise as the death toll has steadily decreased.

While hurricanes are usually defined in terms of wind speed, flooding caused by high water or storm surge kills many more people than the wind. The weight of water...64 pounds per cubic foot is a destructive force. Add to that the undercutting of dunes and buildings,

the constant erosion of beaches and sea walls and you have a recipe for disaster.

What is a storm surge? It is a great dome of water often 50 miles wide

that sweeps across the coast near where the eye of a hurricane makes landfall. This is the most dangerous part of a hurricane. Nine out of ten fatalities are caused by storm surges. When the height of a storm surge is added to a normal height of a high tide and driving winds, it can create a massive storm tide that pushes water well inland and causes severe coastal erosion.

Learning Objective: Students will understand the impact of storm surges on coastal communities.

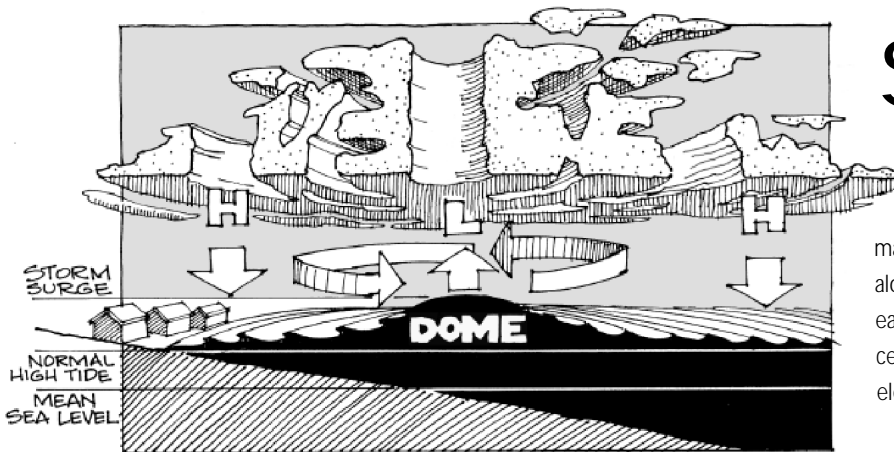
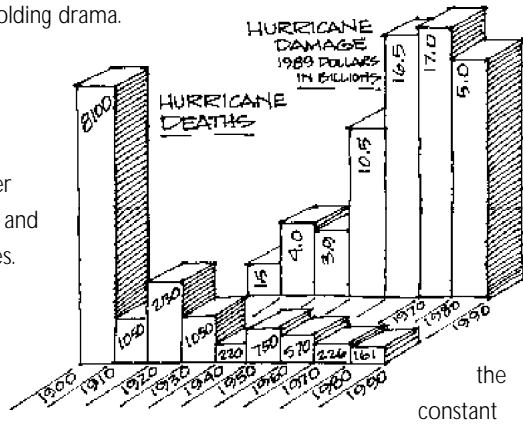
Challenge: Determine the extent of potential flooding from a predicted storm surge of 15 feet in combination with a normal 12-foot high tide.

Materials: Topographic maps of Gulf Coast or East Coast community, road map of the specific area, tracing paper, colored pencils

2. If there were a storm surge of 15 feet on top of a high tide of 12 feet, how far inland would the water reach? Use contour lines to find heights of 25 feet or less. Overlay a piece of tracing paper over the topo map, and shade in the area that would be impacted by the flooding water.

3. Look at a road map for your area. How far in advance would you begin your evacuation? Would any of the escape routes be under water? How far inland would you have to send the people to be safe from the flooding water?

Extension: A hurricane watch is issued for a coastal area when there is a treat of hurricane conditions within 24-36 hours. A hurricane warning is issued when hurricane conditions are expected in a specified coastal area within 24 hours or less.



STORM SURGE

Procedure:

1. Locate a topographic map of an area somewhere along the United States east or gulf coast. Make certain that the map has elevation contours.

Select a major coastal city. You are the head of the local Civil Defense. Discuss the measures that you would consider for your hurricane watch and warning. When will you act? Where will you send people? How will you communicate your message to the public?