

**Lesson 2: How Does Water Depth Affect Storm Surge Damage?**

Near landmasses, there is greater variation in the ocean's depth. Generally, the closer to the coastline, the shallower the water. How does the depth of water on an ocean shelf impact the damage done on property and people due to a storm surge?

**Doing the Science**

1. Start the Storm Surge Simulation by clicking on the "Sim" tab.
2. Select "Basic Factors."
3. Select "Water Depth."
4. Choose one of the three different water depths.
5. Make sure to keep all other factors constant, that is, do not change shelf width, tides, or location.
6. Click on the "Run" icon.
7. Record the Cost and Damage values displayed in the Damage Assessment portion of the screen in Table 1 below.
8. Again, click on "Water Depth." Select a different water depth from step 3. Repeat steps 5 – 7.
9. Repeat step 8 for the remaining water depth.

**Table 1.**

Water Depth	Cost of Damage (\$)	Damage Factor
Deep		
Medium		
Shallow		

**Do You Understand?**

1. Why did you keep all factors other than water depth constant for this experiment?
2. How does water depth impact the damage done by a storm surge?