

## **Summary on Ocean Acidification**

### **What is ocean acidification?**

Ocean acidification is caused by too much carbon dioxide gas dissolving into our oceans' water. Ocean acidification hurts life throughout our oceans, including us.

As humans, we produce large amounts of carbon dioxide gas when burning fossil fuels to drive cars, fly planes, make electricity, and run factories. Our oceans absorb much of this excess carbon dioxide gas. This mixing causes a chemical reaction that increases the acidity of our oceans.

Acidification can also occur due to excess nutrient pollution such as excess fertilizers and garbage. Nutrient pollution that runs into the ocean can trigger a sequence of events that leads to more carbon dioxide in the water, which increases ocean acidification.

Overall, acidification caused by burning of fossil fuels affects our oceans globally, while acidification caused by nutrient pollution affects our oceans in specific locations.

### **How do we measure ocean acidification? How has it changed?**

We use the pH scale to measure how acidic or basic something is. The pH scale runs from 0 to 14, with 7 being a neutral pH. Values above 7 are basic, or alkaline. Values below 7 are acidic.

When we compare the pH of today's oceans to pH measurements of the past there is a distinct difference. We observe that pH today is 30% lower than the pH measured over 150 years ago.

The decrease in pH means our oceans have become significantly more acidic, which hurts ocean life and humans.

### **What can we do to help?**

It's up to all of us to help protect the oceans and reduce ocean acidification.

Overall ways that will help prevent ocean acidification include:

- Reducing the amount of carbon dioxide gas we emit as humans
- Reducing the amount of nutrient pollution that runs into our oceans.

As you continue through this game you will be presented with many different options on how to possibly reduce ocean acidification. After selecting each choice, you will also see how your decision affects the ocean.