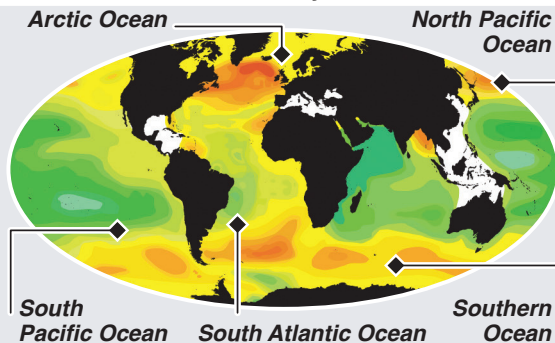


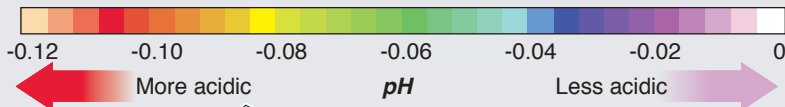
Ocean acidification threat to marine species

The oceans absorb a third of the carbon dioxide emitted from burning fossil fuels. However, as CO_2 dissolves in seawater, the water's pH – a chemical measure of acidity – decreases, and it undergoes acidification



Estimated change in annual mean sea surface pH between pre-industrial period (1700s) and present

Computer models predict fall from pre-industrial pH of 8.2 to 7.8 by end of century. 0.4 decrease in pH will increase acidity by about 150%



Sources of CO_2 in oceans

Nutrients from agriculture

Fossil fuels, cement production

Climate change – CO_2 in atmosphere

Plant and animal decay

1. CO_2 dissolves in seawater to produce carbonic acid

2. Carbonic acid releases hydrogen ions

3. Hydrogen ions combine with carbonate ions present in water

4. Carbonate ions vital to build shells and skeletons of marine organisms