**Ocean acidification**

**Ocean acidification** is the worldwide reduction in the [pH](https://www.britannica.com/science/pH) of [seawater](https://www.britannica.com/science/seawater) as a consequence of the absorption of large amounts of [carbon dioxide](https://www.britannica.com/science/carbon-dioxide) (CO2) by the [oceans](https://www.britannica.com/science/ocean).

Ocean acidification is largely the result of loading [Earth’s](https://www.britannica.com/place/Earth)[atmosphere](https://www.britannica.com/science/atmosphere) with large quantities of CO2, produced by vehicles and industrial and agricultural processes. Since the beginning of the [Industrial Revolution](https://www.britannica.com/event/Industrial-Revolution) about 1750, roughly one-third to one-half of the CO2 released into Earth’s atmosphere by human activities has been absorbed by the oceans. During that time period, scientists have estimated, the average pH of seawater declined from 8.19 to 8.05, which corresponds to a 30 percent increase in acidity.

Marine scientists are concerned that the process of ocean acidification [constitutes](https://www.merriam-webster.com/dictionary/constitutes) a threat to sea life. Increases in ocean acidity reduce the concentration of [carbonate](https://www.britannica.com/science/carbonate) ions and the availability of calcium in seawater. Marine scientists expect that [coral](https://www.britannica.com/animal/coral), [shellfish](https://www.britannica.com/animal/shellfish-animal), and other marine calcifiers (organisms that use carbonates) will be less able to obtain the calcium to build their skeletons and shells. This means that they have to spend a lot of energy trying to repair their homes. They will not able to put that energy into growth or reproduction, which could have a big impact on the food chain. The solution is to put CO2 into long-term storage, or reduce its emission.



