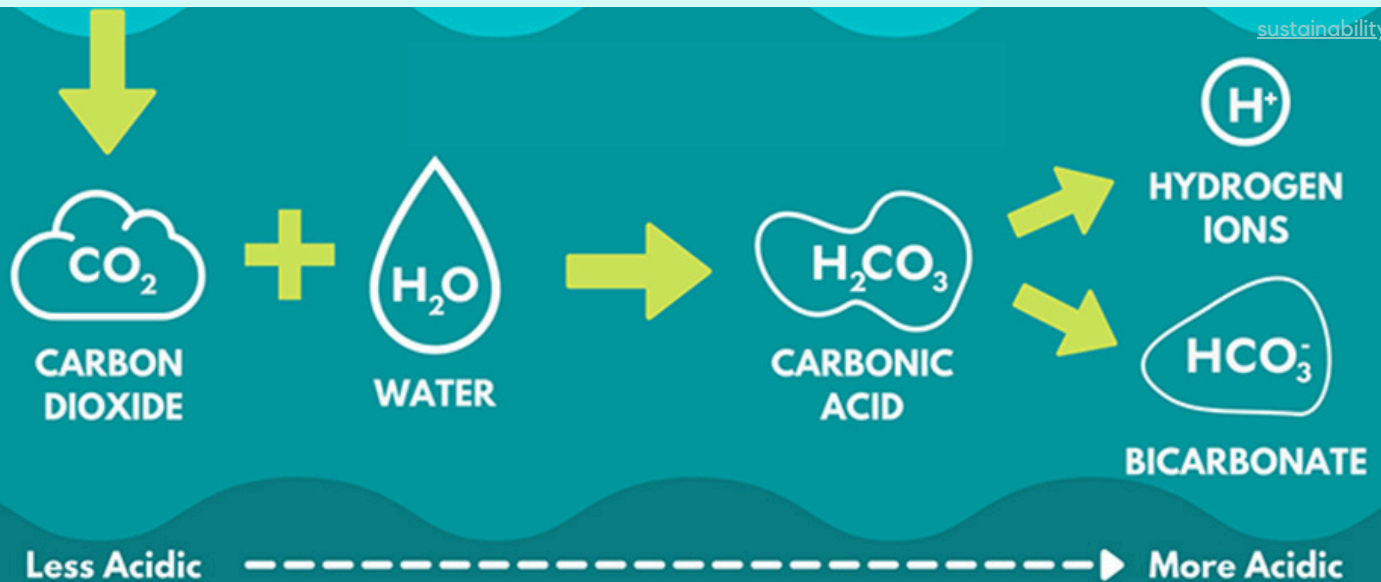


OCEAN ACIDIFICATION KEY CONCEPTS

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What is

OCEAN ACIDIFICATION (OA)

OA is an entire system of chemical changes that happens when we increase CO_2 concentrations in the ocean which causes the pH to decrease.

Ocean carbon dioxide levels are rising over time because oceans act as a carbon sink—meaning they naturally absorb and store CO_2 from the atmosphere. When we burn fossil fuels, CO_2 in the atmosphere increases, and the oceans absorb more of it, raising CO_2 levels in the water.

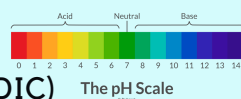
How is OA measured or tracked?

CO_2 SYSTEM PARAMETERS

OA is measured through a variety of means but the most common are:

- pH of Seawater
- Dissolved Inorganic Carbon (DIC)
- Total Alkalinity (TA)
- Partial Pressure of CO_2 (pCO_2)

*additional information: click [here](#)



How is OA different or similar to

COASTAL ACIDIFICATION

Ocean and coastal acidification are characterized by a reduction in pH. While OA is a global issue affecting all oceans, coastal acidification is more localized on nearshore areas which are influenced by factors like nutrient runoff, freshwater inputs, and upwelling which have less of an impact in the open ocean.

What are some impacts of

AN ACIDIFYING OCEAN

- Increases carbonate structures susceptibility to dissolution
- Alters metabolism of calcifying organisms
- Negatively affects keystone species & marine ecosystems
- Alters marine food chain
- Socioeconomic (fisheries, coastal protection, tourism)

OA MONITORING CRITERIA



Critical Areas

- Coral Reefs Restoration Areas
- Areas with restricted circulation (e.g. Mangroves)
- River inputs & agricultural zones
- Estuaries, Lagoons, and Bays
- Presence of Multi Stressors
 - High Temperatures
 - Low Oxygen Concentrations
 - High nutrient runoff
 - Or any combination of the above



Areas of Socioeconomic Relevance

- Ecotourism
- Fisheries
- Underserved Coastal Communities