OCEAN ACIDIFICATION

"the other CO2 problem"

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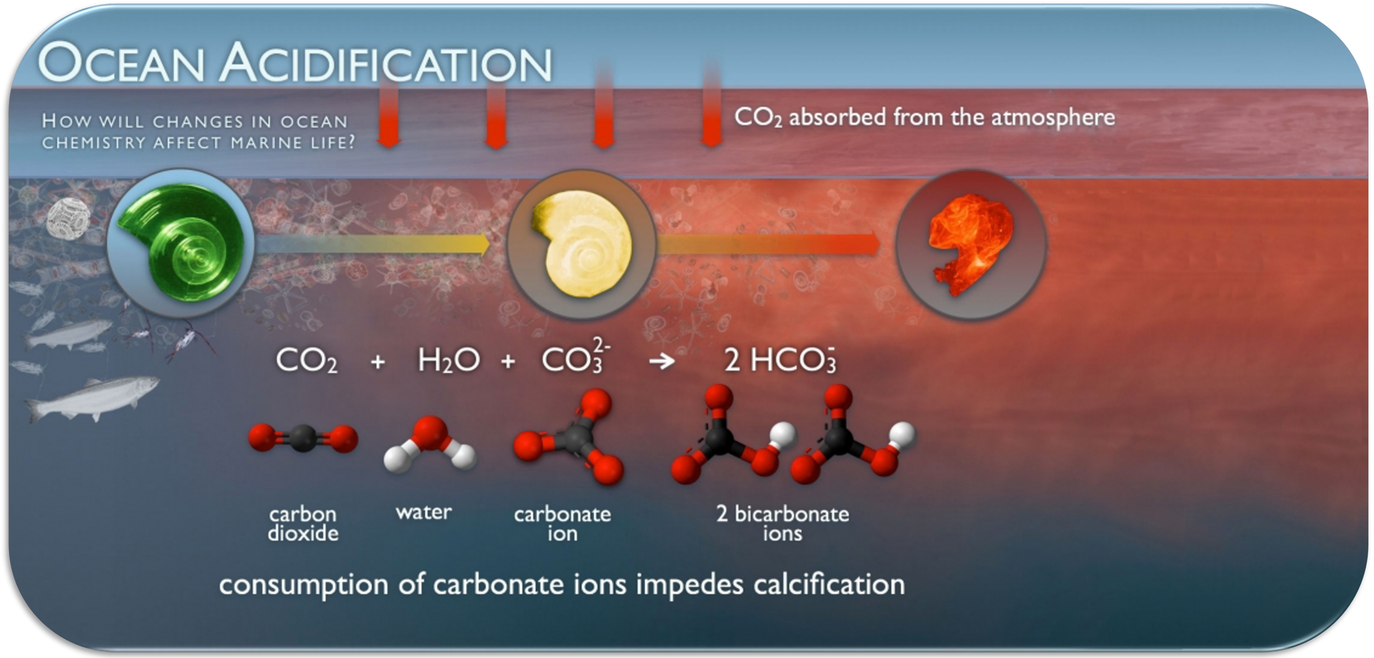

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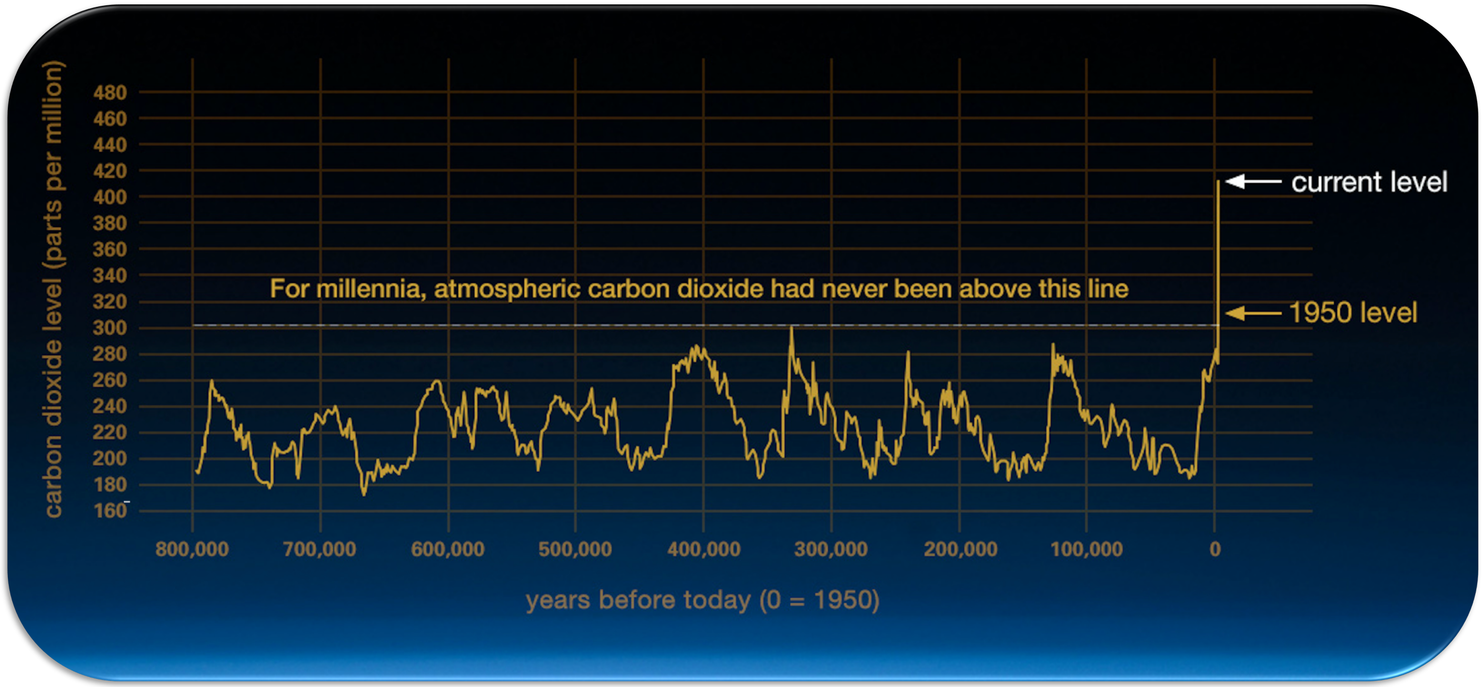
Pre-industrial atmospheric CO2 concentrations of 280 ppm have increased up to 415 ppm nowadays (NOAA, 2019), with an associated pH drop of 0.1 (representing a 30% increase in ocean acidity).

In fact, CO2 uptake implies a gradual acidification of seawater, a process called as ocean acidification



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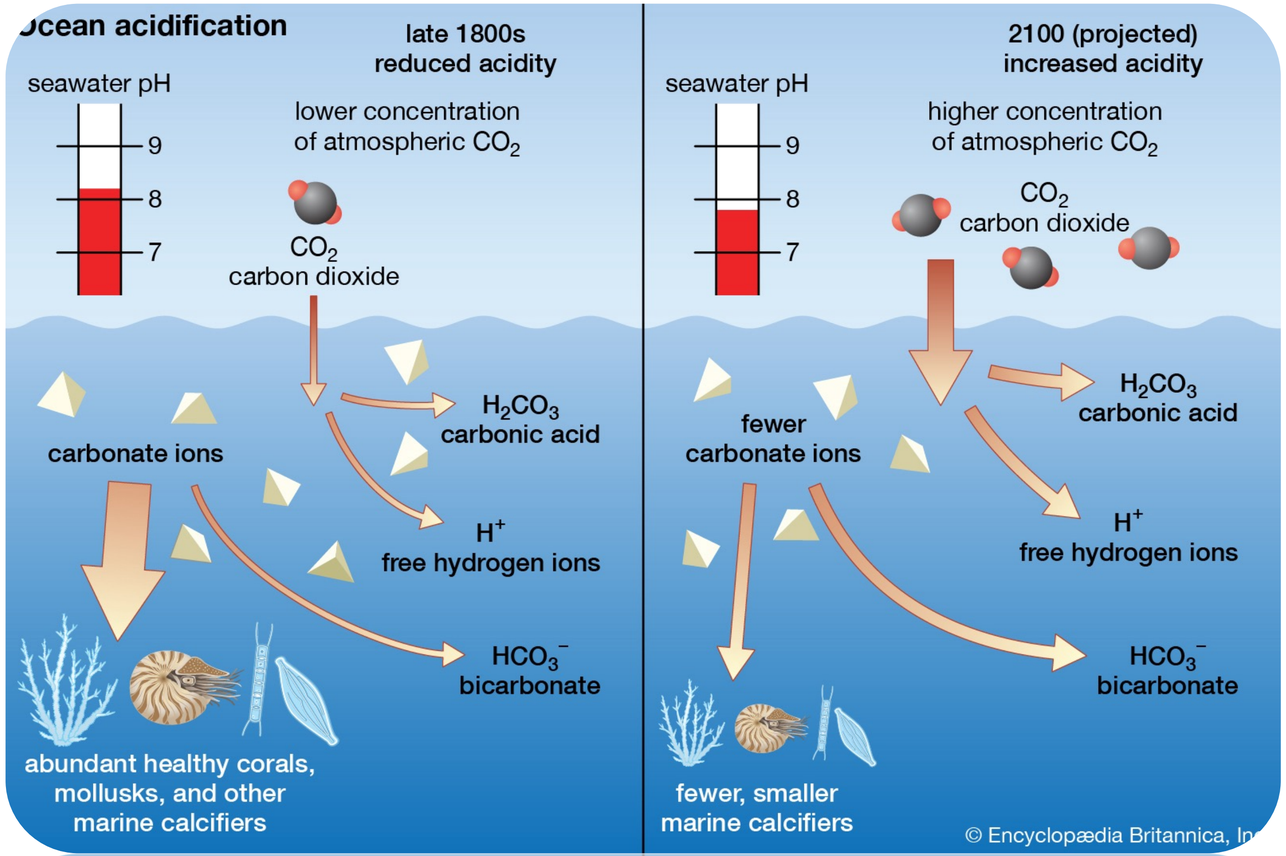
It is estimated that about 2 Gt (± 0.8 Gt) of the carbon dioxide added to the atmosphere each year ends up in the oceans.

Concomitantly, the increased CO2 uptake by the ocean is known to increase bicarbonate ion (HCO_3^-) levels and decrease (besides pH) carbonate ion (CO_3^{2-}), and calcium carbonate ($CaCO_3$) saturation state.



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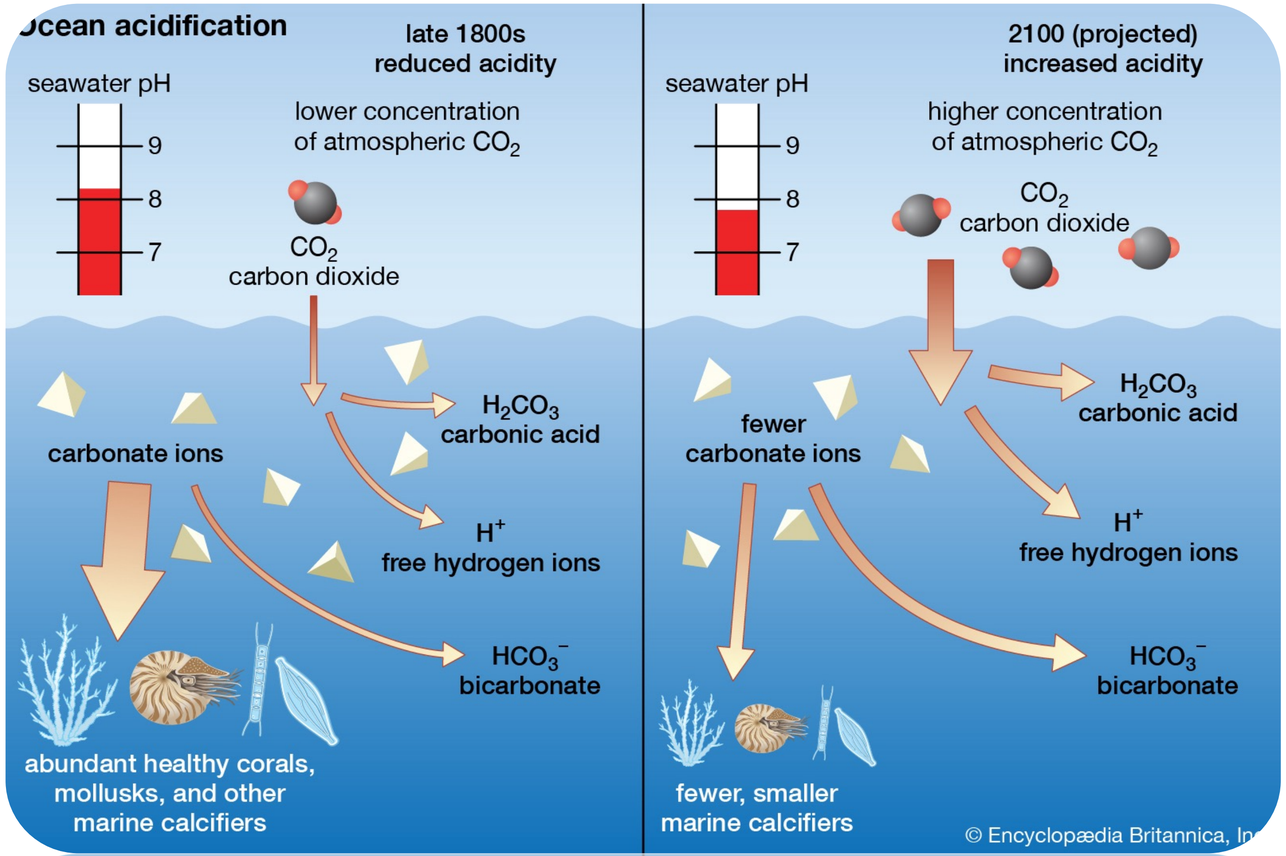
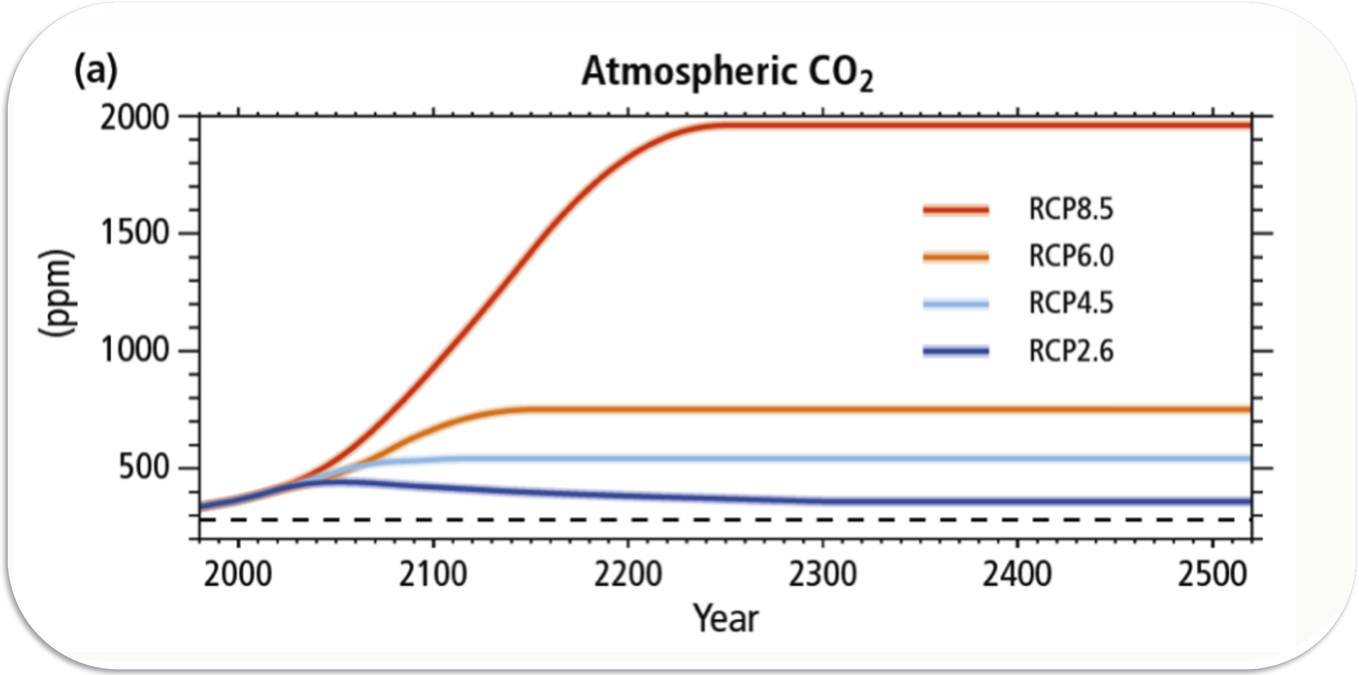
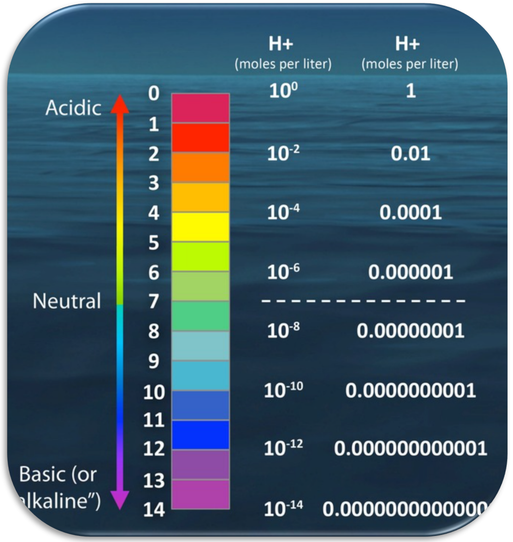


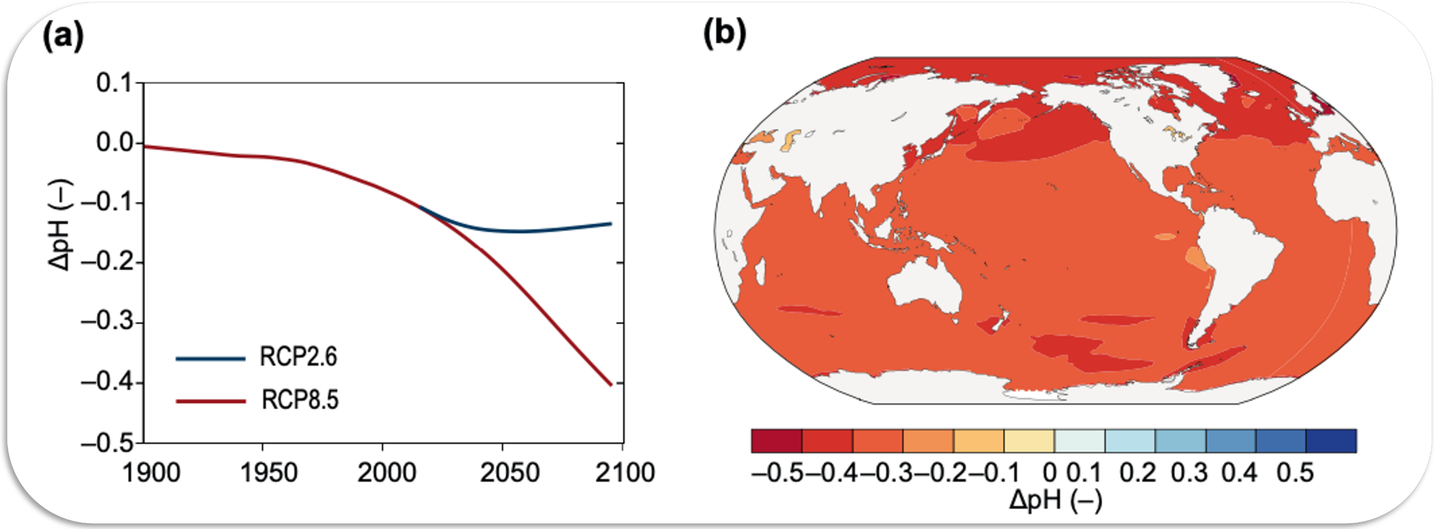
Further increases are expected to happen, with CO2 concentrations up to **940 ppm** (high confidence from several predictive models) expected to be attained by the end of the century, …



IPCC 2019

…. with a simultaneous drop of **0.3-0.4 in pH by 2100.**





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MOVIE - **What Is Ocean Acidification?**

https://www.youtube.com/watch?v=daUQg-WHDlM&t=4s

MOVIE – **ACID TEST (short documentary)**

See it in:
https://www.youtube.com/watch?v=5cqCvcX7buo

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