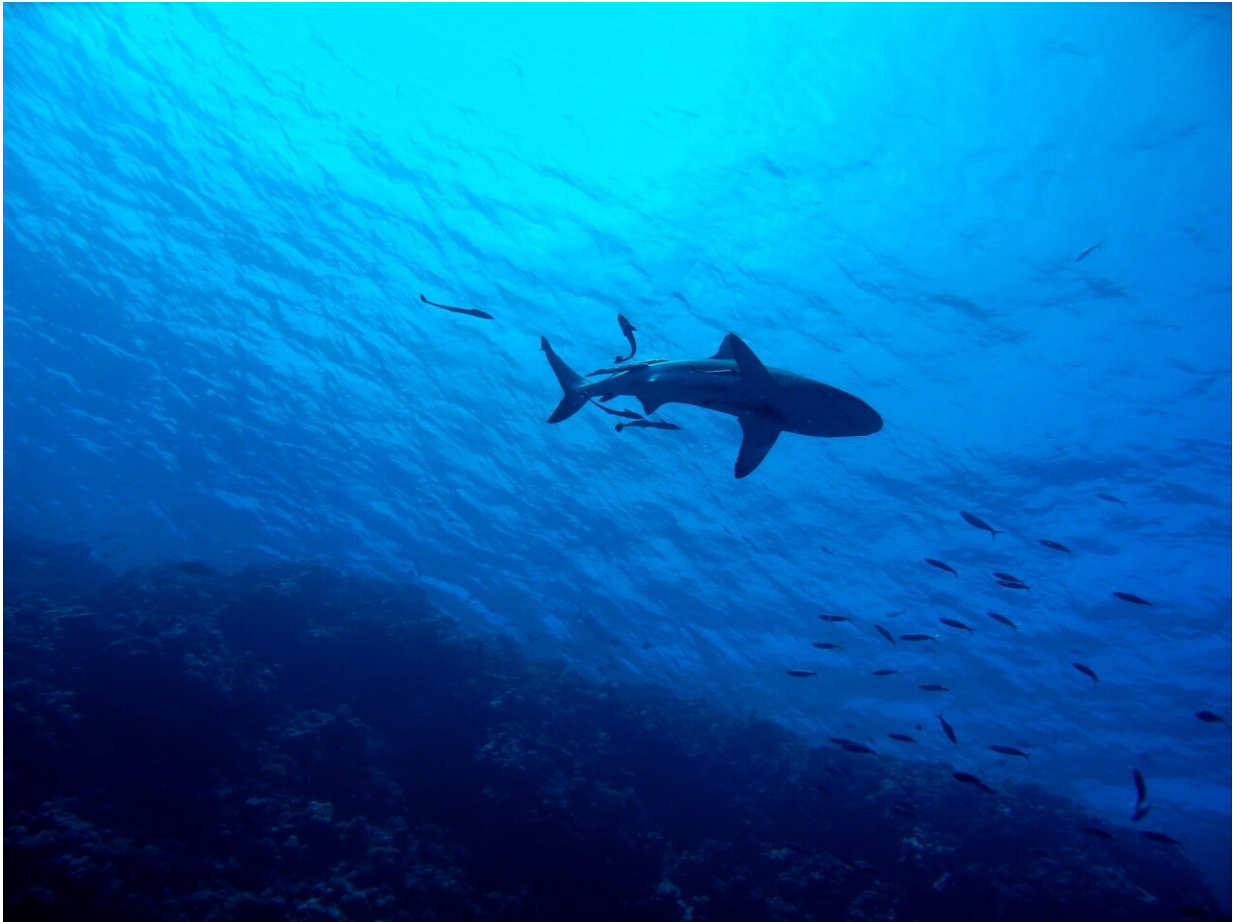


Acidified oceans may corrode shark scales

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Prolonged exposure to high carbon dioxide (acidified) seawater may corrode tooth-like scales (denticles) covering the skin of puffadder shysharks, a study in *Scientific Reports* suggests. As ocean CO₂

concentrations increase due to human activity, oceans are becoming more acidic, with potential implications for marine wildlife. Although the effects of acidified water have been studied in several species, this is the first observed instance of denticle corrosion as a result of long-term exposure.

Lutz Auerswald and colleagues investigated the effects of exposure to acidified seawater in puffadder shysharks. The authors found that in three sharks housed in acidified seawater for nine weeks, 25% of denticles on average were damaged, compared to 9.2% of denticles in a [control group](#) of three sharks that had been housed in non-[acidic water](#). They suggest that such corrosion may impair the sharks' skin protection and open-water sharks' ability to swim, as denticle surface affects their swimming speed. They also speculate that similar corrosion may occur in sharks' teeth (which have the same structure and composition as denticles), which may negatively impact their feeding.

However, the authors also found that although exposure was linked with increased carbon dioxide concentrations in blood taken from a total of 36 sharks housed in acidified seawater for different periods of time, concentrations of carbonate also increased. This prevented the blood from becoming more acidic, suggesting that these [sharks](#) may be able to adjust to high CO₂ conditions during periods of exposure.

More information: Acid-base adjustments and first evidence of denticle corrosion caused by ocean acidification conditions in a demersal shark species, *Scientific Reports* (2019). [DOI: 10.1038/s41598-019-54795-7](#)

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