Ocean acidification a danger to sharks' teeth

1st September 2025

The climate crisis may be posing an existential threat to many species of shark. A new study has revealed that the acidification of the world's oceans is causing sharks' teeth to decay. It is well known in the scientific community that increasing ocean acidity is damaging calcified species like corals, molluscs, and sea urchins. This led marine biologists to research whether shark teeth are at similar risk. Lead author of the study, Maximilian Baum, investigated whether "sharks that swim with their mouths open to ventilate their gills and have constant seawater exposure might also be vulnerable". He concluded that "even the teeth of apex predators show visible damage under acidified conditions".

Baum and his colleagues analyzed 42 teeth from 10 blacktip reef sharks at an aquarium in Germany. They placed the teeth in two separate water tanks for eight weeks. The salt water in one tank had a pH level of 8.2, which is similar to current ocean averages. The water in the other tank was more acidic, with a pH level of 7.3. Baum found that the teeth in the more acidic water had "visible surface damage". This included cracks and cavities, increased root decay, and structural deterioration. He said ongoing damage could impact how sharks feed in the future. Such damage could potentially trigger "domino effects" across the health of many marine ecosystems.

Sources: yahoo.com / *cnn.com* / *theguardian.com*

Writing

The oceans and humans need sharks. Discuss.

Chat

Talk about these words from the article.

climate / climate crisis / species / shark / ocean / acidification / marine biologist / colleagues / aquarium / water tanks / pH level / teeth / decay / domino effect

True / False

1) The article says ocean acidification will kill all species of shark. T / F
2) Ocean acidification is causing tooth decay in sharks. T / F
3) Sharks swim with their mouths open primarily to eat plankton. T / F
4) The teeth of ocean predators are not damaged by acidic sea water. T / F
5) Researchers studied the teeth of sharks that lived off the German coast. T / F
6) Teeth that were put in more acidic salt water resulted in visible damage. T / F
7) Ocean acidification could affect how and what sharks eat in the future. T / F
8) The article says ocean acidification could set off a butterfly-wings effect. T / F

Synonym Match

(The words in **bold** are from the news article.)

1.	**crisis**	a.	decline
2.	**decay**	b.	set off
3.	**ventilate**	c.	open to attack
4.	**constant**	d.	noticeable
5.	**vulnerable**	e.	emergency
6.	**current**	f.	affect
7.	**visible**	g.	non-stop
8.	**deterioration**	h.	present
9.	**impact**	i.	rot
10.	**trigger**	j.	air

Discussion – Student A

a) What do you think about what you read?
b) What do you know about sharks?
c) What do you think of keeping sharks in aquaria?
d) What was the most interesting thing you read in this story?
e) What three adjectives best describe this news story?
f) What might happen to sharks if ocean acidification continues?
g) What could happen in the possible domino effects?
h) What questions would you like to ask the researchers?

Phrase Match

1.	The climate crisis may be posing	a.	ecosystems
2.	the acidification of	b.	to decay
3.	causing sharks' teeth	c.	apex predators
4.	swim with their mouths open to	d.	the world's oceans
5.	the teeth of	e.	cavities
6.	They placed the teeth in two	f.	domino effects
7.	The salt water in one tank had a	g.	an existential threat
8.	This included cracks and	h.	pH level of 8.2
9.	Such damage could potentially trigger	i.	separate water tanks
10.	the health of many marine	j.	ventilate their gills

Discussion – Student B

a) What do you think of shark teeth?
b) What do you think of sharks?
c) How worried are you about ocean acidification?
d) What do you do to avoid decay in your teeth?
e) What could happen if ocean acidification increases?
f) How can we reduce ocean acidification?
g) What part do sharks play in ocean ecosystems?
h) What part does coral play in ocean ecosystems?

Spelling

1. posing an tnixtseelai threat
2. the ccodfaiiitnai of the world's oceans
3. causing sharks' teeth to ecdya
4. their mouths open to vletetnia their gills
5. have constant seawater oepsexur
6. the teeth of apex arserpotd
7. Baum and his ualleseogc analyzed 42 teeth
8. 10 blacktip reef sharks at an iuramuqa
9. This included cracks and sceaiivt
10. structural rnoeraedtiiot
11. potentially trigger idnmoo effects
12. the health of many anrmie ecosystems

Answers – Synonym Match

1. e	2. i	3. j	4. g	5. c
6. h	7. d	8. a	9. f	10. b

Comprehension Questions

Listen to / read the news article. Answer these questions. (Answers are on p. 27 of the 27-page PDF.)

1.	What kind of threat might ocean acidification be for sharks?
2.	What is acidic water doing to the teeth of some species of sharks?
3.	What ocean life is acidic water threatening besides urchins and molluscs?
4.	Who is Maximilian Baum?
5.	Why do some sharks keep their mouths open?
6.	Where did the sharks live that were part of this research?
7.	What is a pH level of 8.2 similar to?
8.	What did researchers find decay in?
9.	How could ongoing damage affect sharks?
10.	What might experience domino effects because of acidification?

Speaking – Ocean Crises

Rank these with your partner. Put the best threats to our oceans at the top. Change partners often and share your rankings.

- Acidification
- Plastic pollution
- Coral bleaching
- Overfishing
- Oil spills
- Deep-sea mining
- Warming seas
- Invasive species

Answers – True False

1	F	2	T	3	F	4	F	5	F	6	T	7	T	8	F

Answers to Phrase Match and Spelling are in the text.

