Oceans becoming noisier thanks to pollution -- report

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A dolphin swims off the coast of Rangiroa, or "Rangi", the most populated of the Tuamotu islands in French Polynesia. The world's oceans are becoming noisier thanks to pollution, with potentially harmful effects for whales, dolphins and other marine life, US scientists said in a study published Sunday.

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Low-frequency sound in the ocean is produced by natural phenomena such as rain, waves and marine life, and by human activities such as sonar systems, shipping and construction.

The sound is absorbed mainly through the viscosity of the water and the presence of certain dissolved chemicals, said the report published in the

science journal Nature.

But the concentration of chemicals that absorb sound in the oceans has declined as a result of ocean acidification, in turn caused by rising concentrations of carbon dioxide.

Rising levels of carbon dioxide come from human activity such as shipping, with the number of ships roughly doubling over the past 40 years, the scientists said.

This was in turn increasing the acidity of the ocean, shown by a lowering of its pH levels, they said.

Using model simulations, the scientists found that increases in acidity could reduce seawater sound absorption by as much as 60 percent by 2100 in high latitude oceans.

Concern about the negative effect of the sea's increased acidity had previously been concentrated on the reduced rate of calcification, such as in coral reefs.

"However, a less anticipated consequence of ocean acidification is its effect on underwater sound absorption," the authors said.

"A decrease in seawater pH lowers sound absorption in the low-frequency range and, as a result, leads to increasing sound transmission."

Future global warming due to an accumulation of greenhouse gases may further decrease the ocean's sound absorption capacity at certain frequencies, the study said.

"High levels of low-frequency sound have a number of behavioural and biological effects on marine life," it added.

This included tissue damage, mass stranding of mammals such as whales and temporary loss of hearing in dolphins associated with military tests using intense mid-frequency sonar, the report said.

Marine species had adapted to varying levels of noise but the consequences of the sea's decreased ability to absorb sound were uncertain and required further research, the scientists said.

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