History repeating itself? Rising acidity in oceans may drive species to extinction

Earth's greatest extinction event happened in a one-two punch 252 million years ago. Research now suggests that the second pulse of extinction, during which nearly all marine species vanished from the planet, happened in the wake of huge volcanic eruptions that spewed out carbon dioxide and made the oceans more acidic.

The work, published in *Science*, is the latest to try to pinpoint the causes of the 'Great Dying', at the end of the Permian period. The study uses chemical evidence in rocks from that period to calculate how quickly ocean chemistry shifted.

Volcanoes in Siberia belched so much CO_2 in such a short period of time that the oceans simply could not absorb it all, says team leader Matthew Clarkson, a geochemist at the University of Otago in Dunedin, New Zealand. Within just 10,000 years, pH levels in at least some of the world's oceans plummeted.

"There was already enormous pressure on life on the oceans," Clarkson says. "And suddenly we have what appears to be a rapid volcanic eruption, the final blow that drove the acidification."

Today, oceans are becoming more acidic as a result of the large amounts of CO_2 produced by human activities such as the burning of fossil fuels; the average pH has dropped by 0.1 units since the beginning of the Industrial Revolution. The Great Dying might represent a worst-case scenario for the future if CO_2 emissions continue to rise, says Clarkson.

Read full, original article: Acidic oceans linked to greatest extinction ever