

Salt may be the key to life on Earth and beyond

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The composition of the atmosphere, especially the abundance of greenhouse gases, influences Earth's climate. Researchers at Purdue University, led by Stephanie Olson, assistant professor of earth, atmospheric, and planetary sciences, have recently found that the presence of salt in seawater can also have a major impact on the habitability of Earth and other planets. The team used a climate model to

investigate the climates of worlds with different amounts of salt dissolved in seawater to predict that saltier oceans tend to result in warmer climates, and therefore, can aid in a planet's ability to host life.

This study, published in *Geophysical Research Letters*, focused specifically on how the amount of salt dissolved in seawater affects planetary climate. The team's findings were that saltier oceans tended to result in warmer climates. This [salt](#) may have been the key ingredient for early Earth habitability in the distant past, when the sun was less bright. This finding may apply to the habitability of other planets as well, potentially allowing life beyond our solar system to exist further from its host star than previously thought.

More information: Stephanie Olson et al, The Effect of Ocean Salinity on Climate and Its Implications for Earth's Habitability, *Geophysical Research Letters* (2022). [DOI: 10.1029/2021GL095748](https://doi.org/10.1029/2021GL095748)

Provided by Purdue University

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