

The Breath of the Lake



SINCE BEFORE MEMORY, THE LAKE EXHALES WHAT NO ONE CAN SEE.

FROM LAND AND ICE GIFTS ARRIVE TO THE LAKE.

FROM THE LAND, CARRIED BY RAIN AND STREAMS, COMES ORGANIC MATTER.

FROM THE ICE COMES DUST, CARRIED BY MELTWATER AND THE WIND.

THE MICROBES, THE LAKE'S TINY GUARDIANS, WELCOME THEM.

THE GUARDIANS FEAST ON THE GIFTS...

SOME METHANE ESCAPES THE LAKE'S SURFACE.

SOME IS CAPTURED BELOW.

...AND IN RETURN, THEY CREATE METHANE.

THE LAKE DECIDES ITS BREATH.

THE ARCTIC IS CHANGING AND THE LAKE MUST ADAPT.

ITS STORY IS STILL BEING WRITTEN.

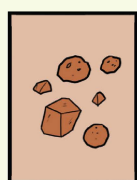
WHAT HAVE YOU SEEN?

Climate feedbacks and methane cycling in Arctic lakes: from enzymes to atmosphere

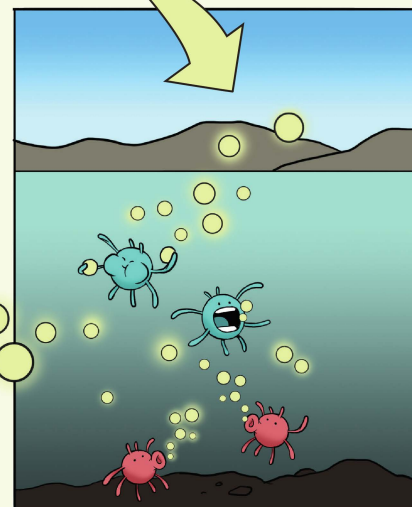
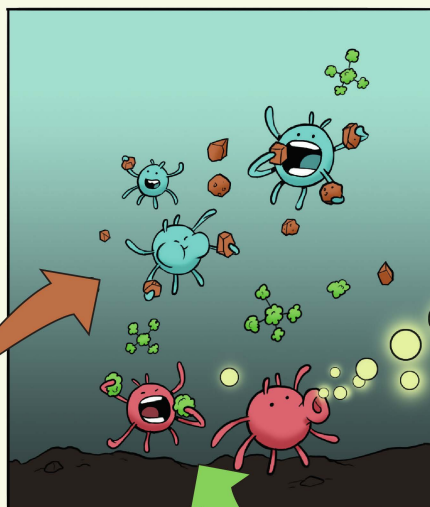


The Arctic is warming a lot faster than the rest of the world. This rapid warming could increase methane emissions, which is a much stronger greenhouse gas than carbon dioxide. Methane is made by microbes in lakes, but luckily there are other microbes that eat it. The balance between these tiny organisms determines how much methane escapes into the air. Together, they form part of the methane cycle.

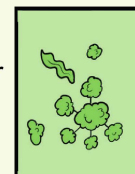
Right now, we do not fully understand how climate change will affect this balance. Warming may stimulate the methane-making microbes, worsening climate change, or it may boost the methane eaters, reducing emissions.



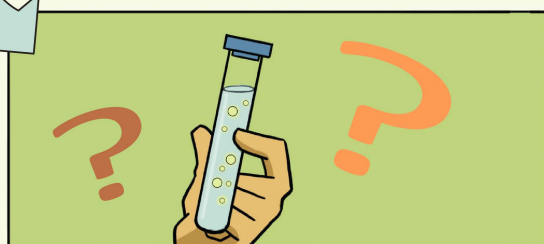
Will rare earth elements boost methane-eating microbes?



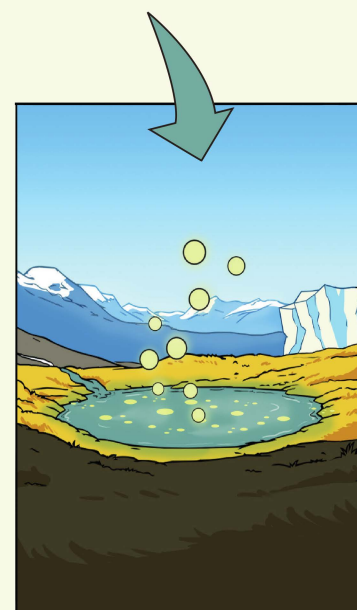
Will an increase in organic matter boost methane-making microbes?



The CLIMET team studies the methane cycle, from the microbes that make it and eat it, to the impact on the atmosphere. We do this around Kangerlussuaq in West Greenland. This landscape between the sea and ice sheet has thousands of diverse lakes, so it is perfect for studying methane in lake water!



We take samples from the water and bottom of the lake to find out which microbes live in it and how they function. We also measure the water quality, and the amount of methane coming out of the lakes. This way, we hope to find out how the methane cycle works in different lakes. We also want to see how it is influenced by the lake's surroundings and climate, both in the past and in the future.



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