

The effect of increased temperature on photosynthetic pigments of *Lithothamnion glaciale*

The Gulf of Maine is one of the fastest warming bodies of water and the biota inhabiting this ecosystem need to physiologically respond to different thermal conditions or they will perish. It is important to understand how increasing temperatures will affect coralline algae. Coralline algae are calcareous red algae that serve ecosystem services including primary production and habitat. This laboratory study investigated how one coralline alga, *Lithothamnion glaciale*, responded to elevated temperatures (23.8°C and 26.9°C) over 26 days by measuring photosynthetic pigment concentrations. At the beginning, mid-point, and end of the experiment, chlorophyll a and phycoerythrin concentrations were measured. At the end of the experiment, *L. glaciale* had a lower concentration of both chlorophyll a and phycoerythrin. The results shed light on how this alga's photosynthetic pigments responded to increased temperatures. The results showed a loss in photosynthetic pigments after the alga was exposed to increased temperatures. If water temperatures continue to rise coralline algae could see a reduction in photosynthetic pigments which means they will not be able to produce as much energy over all.

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