

MS Thesis
Department of Environmental Science and Policy
College of Science
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Defense Date and Time: Monday, April 17th at 2:00 PM

Defense Location: Conference Room DK 3006 and virtual (contact Karl Froscheiser for Zoom information, kfrosche@gmu.edu)

Title: The Potential for Seaweed Farming to Remove Carbon Dioxide: A Meta-analysis on Life Cycle Assessments

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Committee: Dr. Cynthia Smith and Dr. Jennifer Sklarew

ABSTRACT

The Life Cycle Assessment methodology has been used extensively in recent years to examine the potential of seaweed aquaculture as a carbon dioxide removal strategy. However, this literature covers a wide range of species, functional units and end products, obfuscating the true potential of this blue-carbon strategy. This thesis developed a meta-analysis of representative studies published over the last 10 years to better ascertain the global warming potential of seaweed farms. The meta-analysis concluded that seaweed aquaculture can effectively remove atmospheric carbon dioxide; this effect is enhanced if fossil fuels are verifiably replaced by seaweed products such as biofuels.