

# Ocean Visions Develops Framework to Guide Research on Seaweed Cultivation and Sinking for Carbon Dioxide Removal

*Comprehensive research program to inform feasibility and risk assessments*

ATLANTA, GEORGIA, USA , October 13, 2022 /EINPresswire.com/ -- [Ocean Visions](#) and partner [Monterey Bay Aquarium Research Institute](#) (MBARI) have released a framework intended to guide the research needed to assess the efficacy and impacts of cultivating and sinking macroalgae (seaweed) for the purpose of sequestering carbon in the deep ocean and locking it away from the atmosphere as a means to help slow climate change.

The [new report](#) outlines a research agenda that is designed to generate actionable information on cultivating and sinking seaweed at scales that can measurably affect global carbon emissions and the warming associated with it. Also included in the report is a budget tool to support resource allocation for field experiments, as well as a table of existing oceanographic assets, infrastructure, and pilot projects. The report was designed by an international working group led by Ocean Visions and MBARI consisting of members across academia, government, and industry.

Seaweeds are a fast-growing marine species that sequester carbon from seawater in their living tissue. Recently, proposals have emerged to cultivate seaweed and then sink the biomass to the deep ocean to sequester the carbon inside and allow the ocean to remove excess carbon dioxide from the atmosphere.

Though still in early stages, seaweed cultivation and sequestration technologies have attracted serious attention and investment. However, beyond a small number of modeling studies and studies of natural systems that exhibit similar behavior, there is a lack of information necessary to make well-informed decisions about the effectiveness and environmental impacts (both beneficial and detrimental) of sinking seaweed into the deep ocean as a carbon dioxide removal (CDR) strategy.





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*Dr. David Koweek, Ocean Visions Science Director*

“This report will help accelerate the comprehensive science society needs to determine what role seaweed might play in addressing the climate crisis,” says Dr. David Koweek, Ocean Visions Science Director and a lead author of the report.

The Intergovernmental Panel on Climate Change (IPCC) has made clear that large-scale CDR, of between 100 and 1000 gigatons, will be needed this century to stand a chance of holding temperatures to a 1.5°C increase—the goal set out in the Paris Agreement. Climate solutions can take many

forms, from forest restoration and other land management practices to technologies like direct air capture of carbon dioxide. To date, most strategies have been land-based.

Ocean-based pathways offer high potential for contributing to CDR goals and are uniquely positioned for several reasons. The ocean naturally absorbs and sequesters carbon—currently holding more carbon than any other part of Earth’s biosphere—and represents a highly scalable solution due to its sheer size. Moreover, most ocean-based pathways are not subject to climate-driven episodic disturbances, such as wildfire or erosion, that threaten some land-based CDR pathways.

“This research framework provides clear guidance about how all of us—scientists, engineers, funders, policymakers, regulators, and entrepreneurs—can work effectively to generate new knowledge that will help society make informed decisions concerning ocean-related pathways to address climate change,” says Dr. James Barry, Senior Scientist at the Monterey Bay Aquarium Research Institute (MBARI) and a co-lead author of the report.

There are a number of proposed ocean-based climate solutions to remove and sequester carbon dioxide. All of them require additional research, development, testing, and evaluation to determine which may ultimately be most useful to society as a means to combat the climate crisis.

#### ABOUT OCEAN VISIONS:

Ocean Visions Inc. brings together leading oceanographic research and academic institutions with private sector and public-interest organizations to design and advance solutions to the growing threats to our ocean. We are committed to reversing the climate crisis in the ocean, increasing the resilience of coastal systems and communities to climate impacts, and building a climate-resilient aquatic food system. To learn more, visit [www.oceanvisions.org](http://www.oceanvisions.org) or follow @Ocean\_Visions on Twitter.

#### ABOUT MONTEREY BAY AQUARIUM RESEARCH INSTITUTE:

MBARI (Monterey Bay Aquarium Research Institute) is a private non-profit oceanographic research center, founded by David Packard in 1987. The mission of MBARI is to advance marine science and technology to understand our changing ocean.

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