OCEAN VISIONS

Advancing Solutions for Ocean-Climate Restoration

2022 ANNUAL REPORT

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The mission of Ocean Visions is to develop innovative and durable solutions to complex challenges facing our ocean.

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LETTER FROM THE CEO

Dear friends:

As we look ahead to accelerating our ambitious ocean-climate action agenda in 2023, it is useful to take stock of the progress we've made this past year. Although 2022 continued to be tumultuous for the climate, with evidence mounting that climate impacts are intensifying and at faster speeds than predicted, we also saw many hopeful signals. Widening awareness of the magnitude of the crisis we face is spurring a host of innovation and an influx of new talents to address the emergency. And Ocean Visions was at the center of many key advancements.

With gratitude for our incredible partners, funders, and supporters, I'm pleased to take this opportunity to highlight just a few of the strides we've made; you will find others on the following pages.

In 2022, Ocean Visions continued its trailblazing work of mapping innovation pathways to advance ocean-based carbon dioxide removal (CDR). Building on our initial set of three technology-focused road maps, we worked with a new group of experts to develop an innovation map focused on using microalgae to clean up CO_2 pollution. This map will launch digitally in early 2023.

We also made important contributions to accelerate critically needed research for seaweed-based CO_2 sequestration, publishing a detailed research program framework with partner Monterey Bay Aquarium Research Institute.

Over the last year we've also made significant investments to expand a global community of innovators and solvers focused on the twin ocean and climate crises. With two interlocking efforts launched under the framework of the UN Decade of Ocean Sciences for Sustainable Development, we're building new platforms to take ocean-based climate solutions work to a much larger stage.

First, the Ocean Visions – UN Decade Collaborative Center for Ocean-Climate Solutions will broaden our engagement with an international set of stakeholders and institutions to further build understanding and agreement around the suite of new solutions that needs to be developed, tested, and ultimately deployed widely to arrest and reverse the ocean-climate crisis. The Center will function a bit like a global think tank and policy center, convening and supporting key experts, sectors, and interests. In tight partnership with the Center, the Global Ecosystem for Ocean Solutions (GEOS), a program also endorsed by the UN Ocean Decade, will help build the operational networks and human 'ecosystems' to connect the necessary disciplines and sectors needed to generate new science and engineering, develop and test innovations and solutions, and create the conditions needed to deploy those solutions that work. We're grateful to the United Nations for this high-level recognition of our work, and to the Georgia Aquarium and Georgia Tech for their critical partnership and financial support in this endeavor.

As we look ahead to 2023, we will maintain our tight focus on the climate crisis as the biggest threat to the ocean. We refer to our comprehensive ocean-climate agenda as the 4Rs:

1. **Reduce:** Develop ocean-based pathways that replace carbon-intensive alternatives (e.g., ocean-based low carbon food, renewable energy, and bioproducts)

2. **Remove:** Develop ocean-based pathways to clean up carbon pollution from the air and ocean

3. **Repair:** Repair critical marine ecosystems at risk of catastrophic change due to climate change-related impacts

4. **Reach:** Build a global community to innovate and develop ocean-climate solutions

Our upcoming 2023 Biennial Summit, which we've been planning for the last six months, serves as a significant opportunity to help advance these areas of focus. We hope you'll join us for this flagship event for the ocean-climate solutions community that's scheduled for April 4–6 at the Georgia Aquarium in Atlanta.

We are very thankful for your partnership and support, and we look forward to continuing to work with you in 2023 and beyond.

Yours in a thriving natural world, repaired ocean, and restored climate,

Brad Ack
Chief Executive Officer
Ocean Visions

WHO WE ARE

Leadership

Board of Trustees

Emanuele Di Lorenzo, Chairman and Co-Founder of Ocean Visions, Professor at Brown University

Joe Handy, CEO of Clearwater Aquarium

Nancy Knowlton, Sant Chair in Marine Science Emerita, Smithsonian National Museum of Natural History, Co-Founder of Ocean Visions

Fiorenza Micheli, Co-Director of Stanford's Center for Ocean Solutions and of Hopkins Marine Station, and the David and Lucile Packard Professor of Marine Science at Stanford University, Co-Founder of Ocean Visions

Brad Ack, Chief Executive Officer, Ocean Visions

Leadership Team

Clark Alexander, Director of the University of Georgia's Skidaway Institute of Oceanography

Doug Bartlett, Professor of Marine Microbiology and the Deputy Director for Research at Scripps Institution of Oceanography

Annalisa Bracco, Professor and Associate Chair, School of Earth & Atmospheric Sciences at Georgia Tech

Jennifer Dianto Kemmerly, Vice President of Global Oceans at Monterey Bay Aquarium

Al Dove, Vice President of Science and Education at Georgia Aquarium

Emmett Duffy, Director of the Smithsonian's Tennenbaum Marine Observatories Network

Daniela V. Fernandez, Founder and CEO of Sustainable Ocean Alliance

John E. Fernández, Professor and Director, Environmental Solutions Initiative, Massachusetts Institute of Technology

Paul Holthus, Founding President and CEO of the World Ocean Council

Debora Iglesias-Rodriguez, Professor of Biological Oceanography at the University of California, Santa Barbara

Jeff Larsen, Site Lead, Creative Destruction Lab-Atlantic

Fiorenza Micheli, Co-Director of Stanford's Center for Ocean Solutions and of Hopkins Marine Station, and the David and Lucile Packard Professor of Marine Science at Stanford University, Co-Founder of Ocean Visions

Gary Mitchum, Professor of Physical Oceanography and the Associate Dean in the College of Marine Science at the University of South Florida

Kate Moran, President & CEO, Ocean Networks Canada

Rick Murray, Deputy Director and Vice President for Research at the Woods Hole Oceanographic Institution

Millicent Pitts, Chief Executive Officer and Director, The Ocean Exchange

Chris Scholin, President and CEO, Monterey Bay Aquarium Research Institute

Mark Shimamoto, Director, Global Outreach Programs, American Geophysical Union

Rohit Shukla, Founder and CEO, Larta

Eric Siegel, Chief Innovation Officer, Ocean Frontier Institute

Dawn Wright, Chief Scientist of the Environmental Systems Research Institute (ESRI)

Anna Zivian, Senior Research Fellow at Ocean Conservancy

Brad Ack and **Emanuele Di Lorenzo**—Ex-Officio

Staff

Brad Ack, Chief Executive Officer

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Courtney McGeachy, Director of the Ocean Visions — UN Decade Collaborative Center for Ocean-Climate Solutions

Nikhil Neelakantan, Program Manager

Leonardo Valenzuela Pérez, PhD, Program Director, Global Ecosystem for Ocean Solutions (GEOS)

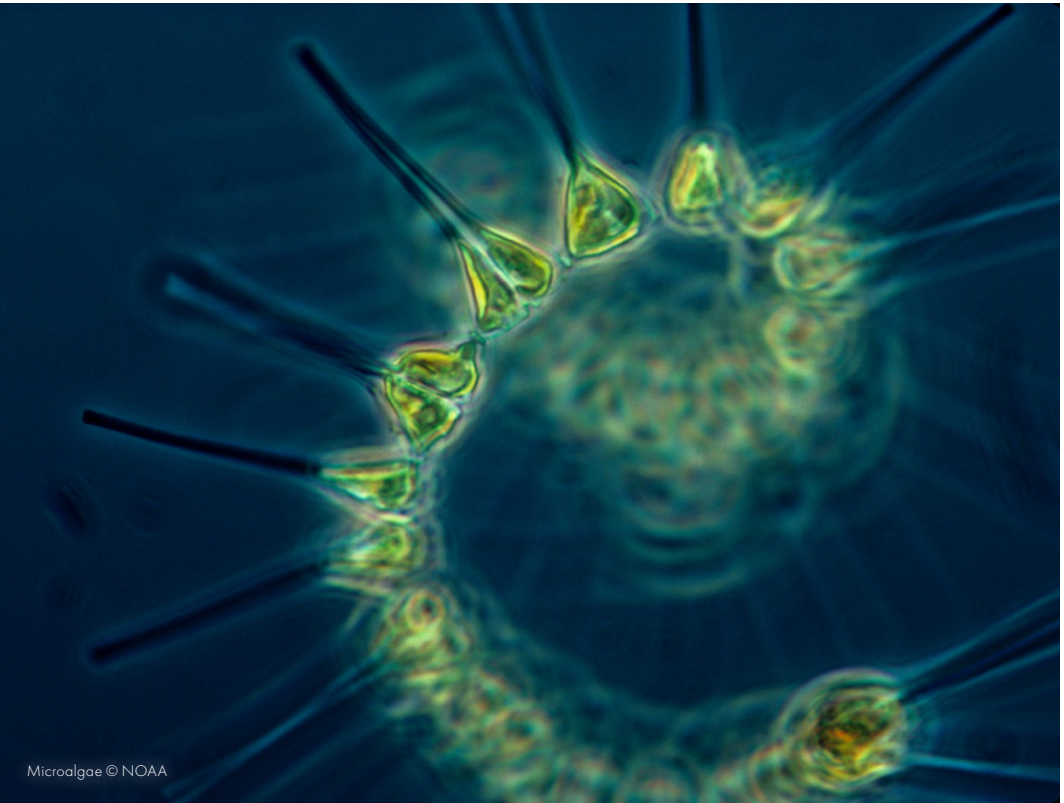
IN MEMORIAM: MARTIN GRAY

Ocean Visions is deeply saddened by the loss of friend, co-founder, and board member Martin Gray, who passed away suddenly in late 2022. During his tenure as Chief Marketing Officer at Georgia Aquarium, Martin was instrumental in helping to establish Ocean Visions as a means to unite a multisector community committed to advancing solutions for ocean health. We celebrate his legacy and are thankful for the many contributions he made to nurture the growth of the organization—including most recently as a champion of the Ocean Visions – UN Decade Collaborative Center for Ocean-Climate Solutions, for which Georgia Aquarium provides critical support.

OUR WORK IN 2022

Juvenile kelp being introduced in the ocean for replanting. © Climate Visuals

Kelp hatchery © Running Tide



Microalgae © NOAA

CLEANING UP CARBON POLLUTION FROM THE AIR AND OCEAN

The biggest threat to the ocean comes from carbon pollution, trapping excess heat and acidity in the ocean. We can solve this only by reducing greenhouse gas emissions as fast as we can and cleaning up billions of tons of the carbon dioxide pollution already in the air and water.

There are many potentially promising ways to clean up this massive amount of pollution—including pathways that harness the natural power of the ocean. In order to advance our collective knowledge of viable possibilities, Ocean Visions in 2021 developed a series of road maps that assess the current stage of various technologies and identify obstacles and first-order priorities. In 2022 we built on this set of road maps and catalyzed a number of efforts against identified priorities.

Accelerating Innovation

Developing a Microalgae Road Map

Microalgae may be able to play an important role in carbon dioxide cleanup. To help evaluate its potential, Ocean Visions is creating a living and interactive tool (road map) to capture the state of various technologies, their potential impacts, knowledge gaps, and a set of "first-order" priorities to accelerate our knowledge of how to use micro-algae for ocean-based carbon dioxide removal (CDR). The microalgae road map will go live on our website in early 2023 and complement the existing suite of road maps, which includes three that are technology focused and two on cross-cutting issues.

Providing Science and Engineering Support to Ocean-Climate Innovators

As part of our continued efforts to support innovation and testing of possible solutions, we provided tailored expert support to six selected competitors for the $100M XPRIZE Carbon Removal through the Ocean Visions Launchpad by building customized expert advisory teams, selected from our Network where possible. These expert teams have helped companies test and validate their technologies and business models in order to improve their chances of success.

DIVE DEEPER

CLEANING UP CARBON POLLUTION FROM THE AIR AND OCEAN

CONTINUED

Supporting Critical Research and Development

Creating a Framework to Guide Research on Seaweed-Based Carbon Dioxide Removal

Growing and sinking seaweed in the deep ocean has received widespread attention as a potential strategy to sequester carbon dioxide and combat climate change. However, there is a fundamental lack of information needed to assess the technology's effectiveness and environmental impacts at climate-relevant scales. Together with Monterey Bay Aquarium Research Institute (MBARI), Ocean Visions released a new report outlining in detail the comprehensive research framework needed to determine the efficacy and impacts of cultivating and sinking seaweed to sequester carbon. The report was guided by the work of a group of 25 experts across academia, government, and industry. We are now working to bring the report to the attention of governments and to identify sources of support that can immediately fund needed research.

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Advancing Ocean Alkalinity Science & Technology through Grantmaking

Ocean Visions partnered with Additional Ventures and a consortium of philanthropic funders to launch the $20M Ocean Alkalinity Enhancement (OAE) Engineering Award and the OAE Research Award. The awards are part of a larger effort to accelerate the understanding of OAE as a potential method for large-scale CDR. Ocean Visions designed and managed the Request for Proposal process and facilitated expert technical evaluation of submitted proposals, drawing on the broad and diverse expertise amongst our Network members and others. The R&D program aligns fully with the priorities outlined in the ocean-based CDR road maps.

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Building Supportive Frameworks to Advance Ocean-Based Climate Solutions

Shifting the Narrative

One of the critical obstacles to moving solutions-oriented research and testing forward quickly is a lack of support among key influencers. To change this, Ocean Visions launched a partnership with Wonder: Strategies for Good, which specializes in social-change public opinion research, to help better understand how certain opinion leaders are forming their beliefs around the field of ocean-based carbon dioxide removal. Audience research takeaways have subsequently informed the development of a communications initiative that will extend through 2023 and beyond to strategically engage and activate our target audiences towards creating more favorable conditions to advance research and development for ocean-based climate solutions.

In addition to the audience research, Ocean Visions increased its visibility at numerous international gatherings, from the UN Ocean Conference, to COP27, and many stops in between to ensure ocean-based climate solutions were getting full consideration.

Enabling Governance Frameworks

The development of effective governance frameworks is a key need in moving forward responsible research expeditiously. In 2022 Ocean Visions partnered with the Sabin Center for Climate Change Law at Columbia University on a new project to develop model federal legislation with the intent to facilitate the permitting of critically needed research and field testing while ensuring all due diligence and full transparency. The initiative included co-hosting a series of stakeholder workshops for members of the scientific community and representatives of government bodies.

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Schematic of Captura's direct ocean capture facility © Captura

Sargassum barrier © Seafields

Ocean Visions CEO Brad Ack at UN Ocean Conference © UNESCO

BUILDING A GLOBAL OCEAN SOLUTIONS COMMUNITY

In 2022 Ocean Visions made important strides towards supporting the development of a global, multisector, and multidisciplinary community interested in innovating and developing solutions to pressing challenges at the ocean-climate nexus.

Ocean Visions – UN Decade Collaborative Center for Ocean-Climate Solutions

The Ocean Visions – UN Decade Collaborative Center for Ocean-Climate Solutions (OV – UN DCC) officially launched in 2022 with critical support from Georgia Aquarium and Georgia Tech—two of the cofounders of Ocean Visions. Headquartered at Georgia Aquarium, the Center will lead and support processes to co-design, develop, test, and ultimately deliver scalable and equitable ocean-based solutions to mitigate and reverse the effects of climate change.

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Global Ecosystem for Ocean Solutions

The Global Ecosystem for Ocean Solutions (GEOS), a program endorsed by the United Nations Decade of Ocean Science for Sustainable Development, helps to expand the work of Ocean Visions to an international scale by lifting efforts, building capacity, and connecting initiatives across continents. A strategic plan was developed in 2022 to craft an agenda that will further its mission to cultivate a diverse community focused on the co-design and co-deployment of solutions to the ocean-climate crises.

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Ocean Visions Biennial Summit 2023

Launched in 2019 and held again in 2021, the Ocean Visions Summit has become a flagship event for the organization and the ocean-based climate solutions community at large. In 2022 the Ocean Visions team planned the development of the Ocean Visions Biennial Summit 2023, scheduled for 4-6 April at the Georgia Aquarium in Atlanta and with virtual attendance options. The Summit will be an exceptional opportunity for a multidisciplinary community to advance solutions to complex challenges at the ocean-climate nexus. Summit topics will fall within five program tracks: Ocean-Based Contributions to Global Decarbonization, Ocean-Based Contributions to Carbon Dioxide Removal, Ocean Ecosystem Repair and Regeneration, Human Adaptation to a Changing Ocean, and Building a Global Community of Solvers at the Ocean-Climate Nexus.

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Building Community

In an effort to grow and engage the ocean-based CDR community, Ocean Visions adopted management of [the former] oceancdr.net, the leading knowledge hub on ocean-based CDR, migrating the community and all content to a new platform hosted Ocean Visions and investing in improvements.

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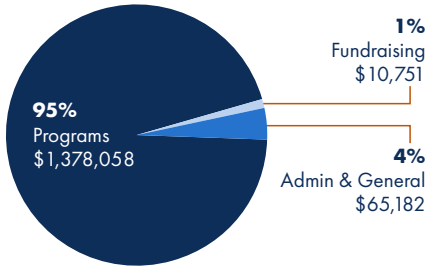
FINANCIAL SUMMARY & OCEAN VISIONS NETWORK

The Ocean Visions Network

Ocean Visions sits at the center of a wider network of partners who work together to advance research, innovation, development, and testing into scalable solutions to address the interlocking crises in our ocean and climate.

2022 Functional Expenses



Functional Expense—$1,453,991

Ocean Visions is grateful for the generous support it received for 2022 from the following:

Additional Ventures

Builders Initiative

ClimateWorks Foundation

Georgia Aquarium

Jeremy and Hannelore Grantham Environmental Trust

Hopper Dean Family Fund

Schmidt Marine Technology Partners

Bernard and Anne Spitzer Charitable Trust

Wells Fargo Foundation