



Ocean Visions at Five: *From Vision to Impact*

Advancing Ocean-Based Climate Solutions

SEPTEMBER 2025





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Reflections

FROM THE CEO

Dear Friends and Partners,

It is hard to believe 5 years have passed since Ocean Visions launched its work! It is a good time to reflect on how far the organization and the broader ocean-climate community have come, and the enormous tasks still ahead of us.

The genesis of Ocean Visions began with a simple observation by our founders of a fundamental gap in ocean conservation: while the worsening state of the ocean's condition was increasingly well-studied and measured, there was not a commensurate level of effort around the development and advancement of tangible, science-based solutions to the new generation of problems. That insight drove conversations, convenings, and ultimately a shared ambition: to create a collaborative innovation ecosystem for people and institutions working on solutions to the ocean's biggest problems—a network that would bridge disciplines, sectors, and geographies.

This idea quickly gained steam and evolved. The first Ocean Visions Summit was organized in early 2019, with great energy from attendees looking to put the search for ocean solutions at the center of the conversation. At the same time, a select group of powerhouse science and oceanographic institutions in the U.S. began developing an MOU, championed by Dr. Emanuele Di Lorenzo, one of our founders, to create an independent structure, with dedicated coordination and sustained support. In June of 2019, Ocean Visions officially incorporated as a nonprofit and launched its network dedicated to advancing new solutions for the ocean. It was built for action, but it didn't have any staff.

Meanwhile, in late 2019 I left my role heading up the Ocean program at World Wildlife Fund to form another new organization—the Ocean-Climate Trust—dedicated entirely to addressing the climate crisis in the ocean. As I began that journey, I met Emanuele and David Koweek, who had been involved in the early development of Ocean Visions from his post-doc position. After a number of energizing conversations about our shared ambitions

for a new ocean solutions agenda, we decided to join forces. We agreed to merge the Ocean-Climate Trust into Ocean Visions, and we moved to raise funds jointly to get going. With a seed grant from the ClimateWorks Foundation, quickly followed by a foundational five-year commitment from the Grantham Environmental Trust, in June of 2020 I officially became Executive Director and David our Science Director.

From the beginning, we were doggedly determined to build an organization, a network, and a strategic set of programs that could *directly address* the climate disruption upending ocean ecosystems and function and harness the ocean's own potential to slow—and even reverse—these dangerous climate-driven harms.

The initial focus of our work was on marine carbon dioxide removal (mCDR). We saw it as a key potential lever to clean up the dangerous buildup of carbon dioxide in the atmosphere and ocean—something we knew was an imperative for the climate and the

“We have accomplished a great deal in these five years, and I am extremely proud of what we have done. It’s amazing what’s possible when people come together with urgency and open minds and a commitment to innovation and science.”

BRAD ACK, Ocean Visions CEO



ocean. Our early work helped to build this new field through technology assessments, innovation road maps, design work, and partnerships to launch new efforts and institutions. Our Launchpad accelerator program was born to connect innovators with expert evaluation and support; our grantmaking helped seed promising innovation; and our research frameworks guided efforts from seaweed cultivation to ocean alkalinity enhancement.

But we never lost sight of the larger ocean-climate solutions agenda that we wanted to advance.

After two years focused largely on mCDR, we were able to turn our attention to standing up the rest of that agenda. Today, with an expanded and still-growing network of institutional partners, we are working on that comprehensive agenda, through our [4R strategy](#)—an interlocking agenda to reverse the ocean and climate crises:

- » **Reduce** CO₂ emissions through development and expansion of ocean-based low-carbon energy, food, transportation and product,
- » **Remove** vast amounts of legacy carbon dioxide pollution by harnessing the scale and potential of the ocean,

- » **Repair** critical marine ecosystems under threat and avoid tipping points that threaten overall planetary stability, and
- » **Reach** new sectors, geographies, and innovators to drive this agenda forward with inclusivity and haste.

We have accomplished a great deal in these five years, and I am extremely proud of what we have done. It's amazing what's possible when people come together with urgency and open minds and a commitment to innovation and science. Our community has grown larger, more diverse, and more impactful. From a handful of partners to a dynamic, multisector, international network. From a shared vision to real action.

And yet, collectively we are still losing ground, and we find ourselves in a moment where we need to accelerate and scale new solutions and approaches at a rate that is hard to imagine. But imagine it we must, or we most certainly won't be able to achieve it!

As we observe and experience the frightening impacts to people and nature of a dramatically disrupted climate, the need for bold, integrated solutions grows more urgent than ever. We will accelerate our work to drive innovation, development, and testing of a wide array of

potential solutions, while grounding our actions in science and working collaboratively across boundaries.

I am deeply grateful to all of you who have been on this journey with us—from our visionary founders and early partner organizations who believed in the vision, to our incredible team, our board, the critical funders supporting our work, and the new partners, voices, and changemakers joining today. Your dedication and expertise inspire me.

On behalf of all of us at Ocean Visions, thank you! Here's to the next five years of accelerating our impact and our scale and to maintaining a thriving ocean and a livable planet.



With deep appreciation
and relentless resolve,

A handwritten signature in blue ink that reads "Brad Ack".

Brad Ack
Ocean Visions CEO



From Idea to Impact

OCEAN VISIONS TIMELINE

LAYING THE GROUNDWORK (2017–2020)

The conceptual roots and community-building that led to Ocean Visions' formal launch.

• **2017** Dialogues amongst leading oceanographic and academic institutions create the seeds for Ocean Visions—a collaborative forum to apply ocean sciences to ocean problems.

• **2018** Planning starts for an inaugural community gathering—the first Summit. Formation of a research consortium begins, with commitments being memorialized through MOUs.

• **2019** Ocean Visions Inc. incorporates as a nonprofit organization, and the Ocean Visions Research Consortium is launched. The first (of four to date) Ocean Visions Biennial Summit is held. The Georgia Aquarium provides critical seed funding for organizational development.

• **2020** Ocean Visions “acquires” the Ocean-Climate Trust and hires an executive director and science director. With a seed grant from ClimateWorks Foundation, followed by a foundational five-year commitment from the Grantham Environmental Trust, Ocean Visions begins work on an ambitious “road mapping” exercise for the then-nascent field of marine carbon dioxide removal (mCDR).

BUILDING AND SCALING IMPACT (2020–2025)

The emergence of a professionally led organization accelerating ocean-climate solutions and building a broader network.

• **2021** Five road maps are published after extensive research and broad international engagement, and targeted outreach begins in a variety of forums to communicate about the maps and the opportunities in mCDR. The Launchpad program is created to support early-stage mCDR innovators. The second Ocean Visions Biennial Summit is held, virtually.

• **2022** Ocean Visions goes international, establishing the Global Ecosystem for Ocean Solutions (GEOS) program under the UN Ocean Decade to support collaborative solutions development in diverse parts of the world. New knowledge products are released, including mCDR illustrations and a comprehensive research framework for seaweed-based CDR. Ocean Visions gets its first international Network partners, with three Canadian institutions signing on.

• **2023** The third Ocean Visions Biennial Summit occurs. OV expands its program work to pursue its original vision, and the 4R Framework (Reduce, Remove, Repair, Reach) is launched. Staff increasingly take to the global stage at key events like COP, Climate Week and the UN Ocean Conference.

• **2024** A first-of-its-kind assessment of potential pathways to slow or reverse Arctic sea ice loss is published as part of the Repair program. The first recipients of an Ocean-Climate Innovation Fellowship program are selected, awarded to three pioneering young leaders in Africa and Latin America. The second Launchpad cohort of eight companies is selected. The OV Network gains new partners in the UK and Italy.

• **2025** The fourth Ocean Visions Biennial Summit takes place in Canada. The Reduce program comes to life with a focus on accelerating low-carbon seaweed-based products and marine renewable energy for carbon removal as foundational areas of focus. The Marine Carbon Dioxide Removal Ecosystem Database and accompanying Field Trial Database are released. Major research design on phytoplankton carbon solutions will be completed this year, as will work on a collective strategy for the mCDR community.

Impact

BY THE NUMBERS

In five years,
Ocean Visions
has grown from a
nonprofit startup
into a catalyst
for global ocean-
climate action.

100+

key engagements Ocean Visions has hosted, participated in, or attended to expand the global ocean-climate solutions dialogue

13

mCDR field trials initiated by cohorts of our Launchpad accelerator program

5

major knowledge products developed

24

members of the Ocean Visions Network, across the United States, Canada, and UK

82

interdisciplinary experts engaged to work on diverse Ocean Visions initiatives

20,000

members of the Ocean Visions constituency

4,200+

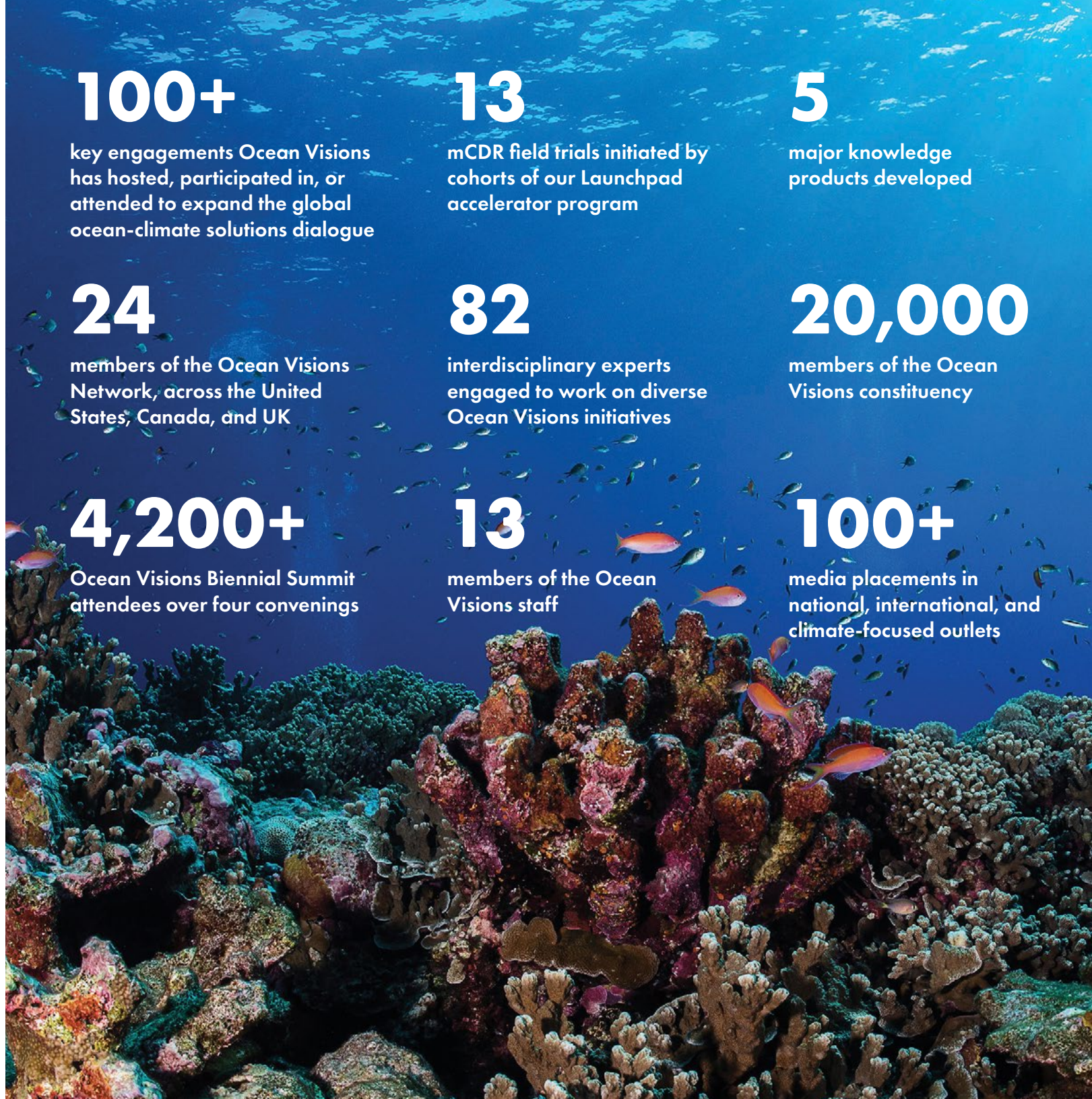
Ocean Visions Biennial Summit attendees over four convenings

13

members of the Ocean Visions staff

100+

media placements in national, international, and climate-focused outlets



Our Program

Ocean Visions leads a cutting-edge agenda to address climate impacts to the ocean. We mobilize and support inventors, scientists, policy makers, and others to develop and advance innovative ocean-based solutions that reduce climate-based stressors, restore ocean ecosystems, and reverse climate disruption. We focus on critical arenas of needed actions that are underinvested, and we catalyze efforts to develop, test, and ultimately scale innovations to the most pressing challenges at the ocean-climate nexus.

Our work is based on a comprehensive strategy to address the interlocking ocean and climate crises. This strategy, from an ocean's lens, is focused on four interdependent elements—or the 4 “Rs” for short:



REDUCE

Society must quickly and dramatically reduce overall levels of CO₂ emissions globally. The ocean has enormous potential to provide more of the low-carbon goods and services needed by humanity, such as food, energy, and materials.



REMOVE

Atmospheric CO₂ is already beyond safe levels for the ocean and people. The only way back to safety from the dangerous zone where those levels eventually peak is to physically remove CO₂ from the air and water. The ocean offers multiple potential pathways to safely remove the legacy emissions needed to rebalance the earth system.



REPAIR

The massive heat energy imbalance on the planet, most of which is accumulating in the ocean, is pushing key parts of the earth system towards tipping points that, if surpassed, will dramatically affect people and nature. Forestalling these tipping points by rebuilding key ecosystems and their climate stabilizing functions in the ocean and the cryosphere is critical at the same time we work to rebalance global energy and reduce climate pollution.



REACH

This massive human endeavour to restore the ocean and climate requires major mobilization of diverse talent, sectors, and cultures. Success will depend on engaging a wide range of people, disciplines, and sectors in the race to develop innovations and enabling frameworks to deploy effective and just ocean-climate action.

Spotlight

ON OUR FLAGSHIP INITIATIVES

mCDR Road Maps: These strategic guides—first released in 2022 in a highly novel digital format to maximum accessibility, and updated regularly—identify the key scientific, technical, regulatory, and social challenges that must be addressed to advance responsible R&D of mCDR approaches. Each road map focuses on a specific CDR pathway—such as ocean alkalinity enhancement, macroalgae cultivation, or electrochemical methods—and includes five sections: scientific research, technology development, measurement and monitoring, governance and policy, and community and stakeholder engagement. Their purpose is to provide credible and regularly updated information to all interested parties, and to drive awareness, engagement, and action against the critical priorities identified in the maps in order to move the field forward.

Arctic Sea Ice Road Map: Ocean Visions created a first-ever assessment of potential pathways to slow Arctic sea ice loss in 2024. Released as an interactive digital road map, the assessment identifies and evaluates 21 potential approaches and is designed to mobilize efforts to advance our collective understanding. The road map is a living document that will be continuously updated as new information becomes available.

Launchpad: Ocean Visions' Launchpad program is a flagship vehicle for accelerating progress in marine carbon dioxide removal research and development. Since its inception in 2022, Launchpad has supported 14 early-stage companies across two cohorts, connecting them with curated expert advisory teams of scientists, engineers, and field practitioners to help advance their technologies toward real-world testing, with participants initiating 13 field trials as of 2025.

Summit: The Ocean Visions Biennial Summit, first held in 2019, has evolved into a keystone gathering for the ocean-climate community. Bringing together roughly 4200 participants from 75 countries over four convenings, the Summit has helped move the field toward a more unified and strategic framework. Through a blend of plenaries, workshops, and networking sessions, the Summit has served as an incubator for emerging ideas, offered a pulse check on the field's progress, and amplified diverse voices across disciplines and geographies.

Global Ecosystem for Ocean Solutions (GEOS):

An endorsed program of the UN Decade of Ocean Science, GEOS helps to catalyze innovation and collaboration to advance ocean-based climate solutions internationally, with a focus on the Global South. At its core are Ocean-Climate Innovation Hubs—regional platforms in Ghana, Costa Rica, Colombia, Iceland, Chile, Tanzania, and Kenya—that foster science-driven innovation and entrepreneurship, public awareness, inclusive partnerships, and enabling policy environments. In connection with our support for the Hubs, Ocean Visions supports emerging leaders in Africa and Latin America through Ocean-Climate Innovation Fellowships.

Advocating for Ocean-Based Climate Solutions on the Global Stage:

Ocean Visions participates in global gatherings—from ocean summits to climate negotiations—to ensure a new generation of ocean-based climate solutions are considered in international agendas. These forums provide critical opportunities to advocate for the ocean's role in addressing climate disruption including pathways like marine carbon dioxide removal (mCDR) and ecosystem repair and restoration. By engaging with governments, scientists, and funders, Ocean Visions helps shape emerging guidance, promote policy coherence, and address major gaps in ocean finance.

Development of Open Access Knowledge

Products: Ocean Visions is a field builder, producing a wide array of information to advance the field. From a model federal law template to an Environmental Impact

Assessment Framework and a High-Level Road Map to advance mCDR, Ocean Visions strives to fill critical knowledge gaps with strategic information oriented to action. Other examples include the mCDR Field Trial Database, which documents methodologies, MRV practices, and lessons learned across 45 field trials and the mCDR Ecosystem Database, which maps more than 130 actors—across areas of research, implementation, governance, and funding—offering users a vital tool to identify collaborators and reduce duplication. Together, these products and tools form an integrated knowledge infrastructure that can guide investments, inform policy discussions, and help unify the field.

Advancing Knowledge on Specific Technologies and Approaches:

Ocean Visions has played a key role in deepening science on several mCDR pathways. An early effort included a partnership with Additional Ventures to launch the Ocean Alkalinity Enhancement (OAE) Research Award, awarding funds for focused, multi-year studies to evaluate OAE's safety and scalability. This work led to the creation of Carbon to Sea. In 2022, a process co-led with the Monterey Bay Aquarium Research Institute and involving 20 global experts produced a global research framework to guide studies on sinking seaweed for long-term carbon sequestration. Our Ocean Iron Fertilization Site Suitability Planning Tool, developed by Esri, was released in 2024 to support the integration of environmental, social, and logistical data to guide responsible field trials. This tool helped to lay the foundation for our current Phytoplankton Carbon Solutions project, which aims to develop a research, development, and demonstration (RD&D) program with detailed recommendations to guide research and field-building activities that are responsible, safe, and well governed.

With Appreciation

From early champions to new collaborators, these voices and organizations have fueled our momentum, challenged our thinking, and shared our vision for a thriving ocean.

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 ocean-climate crisis.



Ocean Visions is grateful for the generous support it has received since its founding from the following:

Additional Ventures

Astera Institute

Bernard and Anne Spitzer Charitable Trust

Builders Initiative

Carbon Fix Foundation

Carbon Technology Research Foundation

ClimateWorks Foundation

Curiosity Foundation

Freemont Bank Foundation

Georgia Aquarium

Georgia Institute of Technology

Grantham Environmental Trust

Hopper Dean Family Fund

ICONIQ

Kissick Family Foundation

Navigation Fund

Radhika & Ambarish Malpani Foundation Inc

Schmidt Marine Technology Partners

Walton Family Foundation

Wells Fargo Foundation

PARTNER VOICES

“Ocean Visions helps us with the connections we need—to get funding, to find collaboration partners on projects. Not only are we connecting in-person at events, but also online to understand what’s happening in Ghana, Tanzania, Colombia, Costa Rica and elsewhere, to discuss ideas and share experiences.”

DR. MARIAM SWALEH

Ocean-Climate Innovation Fellow & Ocean-Climate Innovation Hub Kenya Project Lead

“The Ocean Visions Arctic Sea Ice Road Map enabled us to develop the early prioritization heuristics that informed the design of the Arctic Climate Emergencies Response Initiative. The living nature of the road map is what made it so helpful. It is continuously updated with community contributions that highlight who is addressing which part of the road map. This visibility allowed us to pinpoint high-potential, under-resourced areas where we could maximize impact.”

DR. CHARLOTTE DEWALD

Atmospheric scientist, Fellow and Program Director, Advanced Research for Climate Emergencies

“As a nonprofit that brings startup innovation, academic rigor, and scientific grounding together, Ocean Visions is committed to collaboration and catalyzing solutions—without profit motives or partiality to particular products or technologies, but with the aim of illumination.”

DR. JULIE PULLEN

Oceanographer, climate tech investor, and Ocean Visions board member

“Ocean Visions’ Launchpad program has broadened Captura’s access to key technical and oceanographic expertise that complements that of mine and my teams’.”

DR. SOPHIE CHU

Principal Oceanographer and Director of Monitoring, Reporting, and Verification (MRV) at Captura.

“Ocean Visions stands out as an organization that understands the importance of getting the process right, instead of just focusing on the end product. The time they took in extensive consultations with the Arctic community to create the Arctic Sea Ice Repair Road Map instills trust and confidence that can often be missing from organizations that just have an ‘agenda.’ Similarly, their focus on compiling the state of the science, with references to existing peer-reviewed literature, creates an extremely useful baseline document for those seeking an overview of proposed technologies and their technological readiness levels, as well as current policies and governance issues.

MARISOL MADDUX

Arctic and climate security specialist and Senior Arctic Fellow at the Institute of Arctic Studies at Dartmouth College

“It would take much longer to find out the feasibility of various mCDR methods without such industry connections facilitated by Ocean Visions.”

DR. KATE MORAN

Ocean engineer and president of Ocean Networks Canada

Closing Letter from Co-founder and Board Chair

Five years ago, Ocean Visions began professional operations with a bold mission: to accelerate the development of ocean-based solutions to the climate crisis. I am both humbled and inspired by what this community has built together. From the beginning, we believed that by bringing world-class research institutions together with innovators, accelerators, conservation groups, and sustainable finance, we could spark progress at a pace and scale equal to the challenge. Just as important, we wanted to do this in a way that built trust—grounded in transparent science and open collaboration.

Along the way, Ocean Visions has been a leader in exploring novel solutions to seemingly intractable and complex challenges. By approaching big challenges with inventiveness, transparency, and rigorous science, we have helped create space for open dialogue and new ideas. Today, Ocean Visions has charted a path toward restoring ocean health and addressing climate change—guided by science, strengthened by strategy, and powered by a diverse and growing global community.

This moment would not have been possible without key individuals who shaped the organization. I especially want to honor Martin Gray, who passed away on October 31, 2022. As CMO of the Georgia Aquarium, Martin was a driving and unwavering force in pushing Ocean Visions forward, including committing the early crucial first funding that made all of this possible. I also want to thank my co-founders, Fiorenza Micheli at Stanford and Nancy Knowlton at the Smithsonian, who believed in the power of our vision. I am also deeply grateful to our early funders, who saw the potential in Ocean Visions' ambitious agenda. To our Network members—the scientists, engineers, innovators, entrepreneurs, and institutions who are at the heart of this

work—thank you. And to our growing staff team, that has been so well-led by our two founding staff, Brad Ack and David Kowek: none of this happens without you. You've translated vision into action and made Ocean Visions not only effective but deeply driven by values. I am proud to work alongside you.

Looking ahead, our mission is only becoming more urgent. The ocean is under immense strain from climate disruption. But the world is beginning to understand that the ocean is not only a victim of climate change—it is also a vital part of the solution. Over the next five years, I see Ocean Visions continuing to lead the charge while staying true to who we are: a science-based, collaborative organization dedicated to finding and advancing solutions. All of this work requires diverse voices, a wide range of experiences, and rigorous science and open-mindedness.

We still have a long way to go and some tidal currents to overcome. But if the last five years have taught me anything, it's that there is power in shared vision and community, fueled by determination. Together, we've built something strong, resilient, and full of promise—something that is only beginning to show the world what's possible.



With love, gratitude, and humbleness,



Emanuele (Manu) Di Lorenzo
Co-founder and Board Chair,
Ocean Visions



“From the beginning, we believed that by bringing world-class research institutions together with innovators, accelerators, conservation groups, and sustainable finance, we could spark progress at a pace and scale equal to the challenge.”

EMANUELE (MANU) DI LORENZO
Co-founder and Board Chair, Ocean Visions

