



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

## What is the Ocean Visions – UN Decade Collaborative Center for Ocean-Climate Solutions?

With support from Georgia Aquarium, the Georgia Institute of Technology and Ocean Visions, the Ocean Visions – UN Decade Collaborative Center for Ocean-Climate Solutions (OV-UN DCC), leads and supports processes to co-design, develop, test, and ultimately help deliver scalable and equitable ocean-based solutions to mitigate and reverse the effects of climate change.

The only one of its kind in the US and headquartered at Georgia Aquarium, the Center's work contributes to United Nations Sustainable Development Goals by leveraging the framework of the UN Ocean Decade to extend and strengthen a focus on ocean-based climate solutions and innovation.

The Center will pursue, among other things:

- Supporting ocean-climate innovations and solutions
- Focused ocean-climate solutions research collaborations
- Education, outreach and capacity-building specifically tied to the core objectives
- Advancing international collaboration and policy frameworks for development and deployment of ocean-based climate solutions

The OV-UN DCC engages with an international set of stakeholders and institutions to further build international understanding and agreement around the suite of new solutions that need to be developed, tested and ultimately deployed widely to arrest and reverse the ocean-climate crisis. The Center functions as a global think tank and policy center, convening and supporting key experts, sectors and interests to better design and advance ocean-climate innovation agendas globally.

## Key Facts about Climate Change and Ocean Health:

- The climate crisis is one of the greatest threats facing public health, natural resources and the economy worldwide. It also is the greatest threat to the ocean, which nurtures 80% of all life on Earth. Billions of people rely on food from the ocean, and world economies depend upon it for fishing, tourism, shipping, energy and more. Not only is the ocean ecosystem at risk, but it is the world's largest carbon sink, vital to curbing the impacts of climate change.
- Human activities have increased carbon dioxide (CO<sub>2</sub>) levels by more than 50% in the atmosphere and by 30% in the upper layer of the ocean. The effects of CO<sub>2</sub> pollution and excess heat on the ocean are unraveling the system:
  - Warmer ocean water holds less oxygen.

- Warmer upper layers of the ocean inhibit mixing with the middle layer of the ocean, which is a primary exchange system that brings nutrients into the global food web.
- These warmer waters expand, and that expansion is causing a significant portion of the sea-level rise that coastal ecosystems and communities have been experiencing.
- Warmer waters also drive marine heat waves that decimate coral reefs. More than half of the Earth's tropical coral reefs have already been lost in part due to heating and bleaching.
- Warmer waters are driving species that can migrate to do so; their move toward cooler water is leading to migrations of fish stocks poleward.
- Warmer waters mean less Arctic sea ice, which in turn adds to conditions that drive further warming and large scale impacts on the climate.

### **What Are Ocean-Climate Solutions?**

Significantly reducing carbon dioxide emissions globally is essential, but it will no longer be enough to keep global warming from exceeding 1.5 degrees Celsius – the tipping point for dangerous and potentially irreversible climate disruptions. Billions of tons of carbon dioxide pollution also must be removed from the atmosphere. The world's oceans offer substantial opportunities for climate mitigation and carbon clean-up.

Oceans are the largest carbon cyclers on the planet. Ocean-climate solutions can take many forms, including:

- Natural solutions, like mangrove, salt marsh, sea grass and seaweed restoration and conservation to absorb and store carbon
- Technologies that can strip CO<sub>2</sub> from the atmosphere or remove it from the air and water and safely store it permanently
- Technologies that enhance and assist the growth of seaweed and phytoplankton
- Ocean alkalinity enhancement technologies
- Ocean-based renewable energy technologies
- Sustainable fisheries and aquaculture to produce low-carbon food

### **What is the United Nations Decade of Ocean Science for Sustainable Development?**

In 2017 the United Nations proclaimed a Decade of Ocean Science for Sustainable Development to be held from 2021 to 2030. This Decade aims to provide a global framework to ensure that ocean sciences fully support countries' actions to sustainably manage the ocean and to achieve the 2030 Agenda for Sustainable Development. The Decade provides an opportunity to create new collaborations across the science-policy interface to build transformative new solutions for our oceans and coasts that will benefit humanity. The Ocean Decade is being coordinated by the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific, and Cultural Organization (IOC-UNESCO) to promote transformational, large-scale change and advance urgent action to move from the "ocean we have to the ocean we want."

### **What is a Decade Collaborative Center?**

Decade Collaborative Centers (DCCs) provide support to the Decade Coordination Unit (DCU) within the IOC-UNESCO Secretariat—the central hub that manages the day-to-day operations and implementation of the Ocean Decade. DCCs provide support to the DCU and aligned Decade Programs via providing technical, logistical, and financial support for stakeholder engagement, catalyzing new [Decade Actions](#), communications, awareness-raising and outreach, resource mobilization, and monitoring and reporting.

### **About Ocean Visions**

Ocean Visions Inc. is a nonprofit organization working to catalyze the development of new ocean-based approaches and solutions to the climate crisis by forging and accelerating collaborations across not only oceanographic and academic research institutions, but also marine resource managers, conservation organizations, investors, entrepreneurs, governments, and others. With this multisector and multidisciplinary community of problem solvers, Ocean Visions helps to further the innovation, development, and demonstration of the types of solutions necessary for a healthy, regenerated ocean. The establishment of the Ocean Visions - UN Decade Collaborative Center for Ocean-Climate Solutions (OV - UN DCC) represents a continuation of this journey, expanding its operations model more globally.

### **About Georgia Aquarium**

Georgia Aquarium is a leading 501(c)(3) non-profit organization located in Atlanta, Ga. that is Humane Certified by American Humane and accredited by the Alliance of Marine Mammal Parks and Aquariums and the Association of Zoos and Aquariums. It is also a Center for Species Survival by the International Union for the Conservation of Nature. Georgia Aquarium is committed to working on behalf of all marine life through education, preservation, exceptional animal care, and research across the globe. Georgia Aquarium continues its mission each day to inspire, educate, and entertain its millions of guests about the aquatic biodiversity throughout the world through its hundreds of exhibits and tens of thousands of animals across its eight major galleries.

### **About Georgia Tech**

The Georgia Institute of Technology, or Georgia Tech, is a top 10 public research university developing leaders who advance technology and improve the human condition. The Institute offers business, computing, design, engineering, liberal arts and sciences degrees. Its nearly 44,000 students representing 50 states and 149 countries, study at the main campus in Atlanta, at campuses in France and China and through distance and online learning. As a leading technological university, Georgia Tech is an engine of economic development for Georgia, the Southeast and the nation, conducting more than \$1 billion in research annually for government, industry and society.