



CALIFORNIA  
OCEAN  
SCIENCE  
TRUST

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# 2021 ANNUAL REPORT

California Ocean  
Science Trust

Created by the California Legislature in 2000, Ocean Science Trust bridges the gap between cutting-edge science and sound ocean management



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# Letter from the Executive Director

2021 tested all of us. We acknowledge the trauma and pain felt by so many in California this year as the COVID 19 pandemic was confounded by drought, wildfire evacuations and persistent smokey skies. At Ocean Science Trust, our team's dedication to our mission was a source of solace. Together, we reaffirmed our commitment to strengthening the connections between cutting-edge scientific research and sound ocean management, doing our part towards a vision of a healthy, equitable and productive coast and ocean.

Amidst the backdrop of pandemic and environmental turbulence, I am inspired by the dedication and commitment of the full OST team, and grateful for the partnership and collaboration of so many scientists, managers, elected officials and coastal community members through the year.

As climate change is already impacting coastal communities, economies and ocean resources, our collective need to accelerate science-based action is clear. Today, we need rapid and responsive processes that bring salient science advice to a wide range of regulators, policymakers and managers.

Responding to the urgency of the moment, and the challenges felt every day by California's lawmakers, we launched a new program delivering science directly to Legislative members, staff and committees. 2021 also afforded us the opportunity to refresh and update our vision for effective delivery of science advice to executive branch agencies and departments. We are thrilled to share highlights of this work below.

This year, more than ever before, we focussed on our mandate to support graduate education and foster the science-policy leadership of tomorrow. We appreciated the opportunity to host six interns and fellows from a broad spectrum of California universities, and are deeply committed to supporting pathways for increasing inclusivity, equity and diversity in academia and beyond. We will continue to strive towards a vision in which our ocean science community and leadership is inclusive and reflective of the diversity of California, and look forward to continued partnership with students, faculty, funders and more.

Warm Regards,

Liz Whiteman, Executive Director





# New! Legislative Science Services

## Strengthening Access to Actionable Science for Lawmakers

Building on two decades of success in providing science advice to California's government agencies, in early 2021, OST launched a new Legislative Science Services program to bring science directly to California lawmakers.

In the first year OST has established a reputation as an objective broker of science information and advice, supporting representatives, committees, and their staff. We provided both proactive information delivery on issues the research community identifies as critical, such as the kelp loss crisis, and engagement responsive to emerging policy priorities, such as offshore wind and blue carbon. Highlights include 4 expert panel briefings, engagement with over 70 offices and 10 committees, and over \$182,000 raised from philanthropic sources.

Key to our success in building a vibrant relationship between science and lawmaking is providing policy-relevant and solution-focused advice. We are committed to a vision, for Sacramento, and for California, of a lawmaking culture infused with ocean and coastal science. In the coming months we look forward to engaging on topics such as microplastics, equity in coastal adaptation, ocean-based carbon-dioxide removal, seaweed aquaculture, and many more in response to California's priorities.



## 2021 Highlights


- **3 expert briefings with >100 attendees** each executed on blue carbon, the kelp loss crisis, and offshore wind, delivering unique opportunities to hear directly from panels of interdisciplinary experts at the top of their field. We proudly partnered with both California State University's Council on Ocean Affairs, Science & Technology (CSU COAST) and California Council on Science & Technology (CCST).
- **70 offices and 10 committees engaged** to introduce the services we provide and offer individualized science advice to staff based on elected representative priorities. OST facilitated connections between scientists and staff by arranging for deeper technical discussions or recommending experts to serve as hearing witnesses.
- **Technical, individualized advice delivered on over 10 topics or bill ideas.** OST leveraged our deep network of scientific experts in California to provide technical advice on bill ideas across a variety of topics, including DDT pollution, blue carbon potential, and the kelp loss crises.

Read more in our [Year 1 Report](#)





# Supporting the Future Science- Policy Workforce



Our founding legislation includes a mandate to support graduate education, and a commitment to future ocean and science workforce development. We are deeply committed to supporting inclusive graduate education and opportunities, building pathways for increasing diversity in science leadership in academia and beyond, and empowering academic scientists to promote institutional and cultural change.

## Diversity, Equity, and Inclusion in Ocean Sciences

In partnership with the Coastal and Marine Sciences Institute, UC Davis and the Estuary & Ocean Science Center, SFSU, OST is leading a collaborative initiative for advancing Diversity, Equity, and Inclusion (DEI) in California's ocean sciences. Through this work, we aim to empower a more diverse next generation of scientists and ocean professionals that is reflective of California's diversity by elevating equity and inclusivity across our ocean science academic community.

To date, this initiative has collectively brought together over 60 participants across four themed roundtables, connecting over 25 California higher education institutions (in private and public universities, and community colleges) and 15 major scientific organizations, as well as both federal and state agencies. These discussions have fostered collaborative action and elevated agency across graduate and undergraduate students, postdocs, tenure and non-tenure faculty, career development professionals, and many others within the ocean science career system. Read more about our [ongoing work here](#).







## Stories from our 2021 Fellows and Interns

### **Reimagining Career Pathways at the 2021 CalCOFI Conference**

By Kevin Travis

### **Reflections of an OST Intern**

By Heidi Waite

I was acting as a “fly on the wall” and listening intently to the discussion unfolding in the Zoom room during an OST project meeting. Halfway through, I realized the team was made up of all women! I was overwhelmed with emotion. I felt so lucky and excited to not only work with these amazing women, but to have the chance to intern with OST. I’m so grateful for the mentorship I received at OST and to work alongside such an incredible and diverse team. This summer, I was UC Center Sacramento’s summer GOLD Fellow...

### **Tackling the Complexities of Ocean Contaminants**

By Amanda Chiachi

The complexity of the ocean is mirrored by an equal complexity in the organizations that work alongside it. OST has deep, dynamic projects that together, help lead to robust solutions. Every conversation that I have had regarding one project, has potential to help inform another. One of the primary goals at OST is to bring actionable, informed science straight to policy makers. One such project that I worked closely on during my CSU Council on Ocean Affairs, Science, & Technology Summer Internship is Legislative Science Services...

### **Navigating a Boundary Spanning Organization**

By Ryan Hasert

A tugboat can move ships hundreds of times its own size. For anyone that grew up around a marine port, like myself along the West Seattle shoreline, it can be a mesmerizing experience to watch these small boats guide immense cargo vessels to the docks. Built to be powerful and compact, they’re the shepherds of massive vessels, a keystone facilitator of trade and commerce, and operate with precision in high-stakes environments. Ignoring for a moment the pressing environmental impacts on marine systems that the maritime shipping industry can bring, I’d like to imagine the Ocean Science Trust (OST) as one of those mighty tugs...



# Bringing Social Science Forward

For far too long, the social sciences have not been given the credit and attention they deserve as core to progressing towards a healthy, equitable and sustainable California coast and ocean. In 2021, we developed new multidisciplinary collaborations to increase the use and value of social science in addressing emerging issues in California. Through these social science efforts, OST is helping to bring multiple voices, fresh ideas and perspectives, and diverse sources of knowledge to better inform state policy decisions and develop actionable solutions for California's coasts and oceans.

We have developed, and are currently testing, new approaches to infuse social science into state priorities. For example, we are working with social scientists to identify flexible fishing permits for state-managed fisheries and adaptation solutions for the aquaculture industry to respond to climate change impacts. We are engaging relevant stakeholders and developing social science guidance for resource managers to assess and incorporate human dimensions and equity considerations into sea otter reintroduction and living shorelines. These projects are providing essential services to the state by establishing a thorough understanding of the experiences, knowledge, and needs of coastal communities.

OST is committed to continue supporting and facilitating the use of social science in California policy decisions, which will be crucial for identifying equitable, practical, and societally-relevant solutions.







# Delivering Science Advice to Policymakers

We bring science to bear to accelerate progress towards the State government's vision for a healthy, equitable, and productive ocean and coast. We continued our long-standing role of supporting evidence-informed decisions by the California Ocean Protection Council as science advisor and convenor of the OPC Science Advisory Team.

The release of the IPCC physical science report in mid-2021 even more starkly than expected underscored the need to accelerate action on climate. But most of the ways in which science interfaces with policy were designed for a different time. Through 2021 we appreciated the partnership of OPC SAT members and other science-policy colleagues in taking a reflective look at what's working, what could be improved and importantly, what needs to change in the context of today, in order that the SAT can bring the most salient solution-oriented knowledge to decision makers. There are pieces of that that are about speeding up the process of being responsive on political timelines. There are also pieces that are about communicating what it is that science knowledge brings to the table: not more questions than answers, or challenges to overcome but roadmaps for action, strategic cost-effective choice sets, and solutions, even in the face of deep uncertainties. Today, with a new vision and operational plan for the SAT in place, we stand ready to respond to the moment and deliver necessary actionable science advice.



## Science paves the way for nation's first microplastic strategy



In December 2021, California became the very first state in the nation to develop a [Statewide Microplastics Strategy](#) to address microplastic pollution to our state waters. The Strategy, developed by the Ocean Protection Council and partner state resource agencies, was informed by OST's 2021 report "[Microplastic Pollution in California](#)" and details several policy solutions and research priorities to prevent and reduce the amount of microplastics entering the marine environment. The strategy proposes a strong argument for tackling microplastic pollution in a precautionary manner, one in which that allows the state to start implementing solutions while the science of microplastics continues to develop.

Microplastics scientists from across the country were pivotal in providing strategic scientific direction to the state on the strategy, including advice on [assessing the risk of microplastic pollution](#) provided by a scientific working group of the OPC Science Advisory Team, convened by OST.

Key findings and recommendations from the final working group report were the basis for several solutions in the strategy, including the need for precautionary management of microplastics, emphasis on source reduction, and prioritization of sources the state should target to curb microplastic pollution. Scientists from the working group, including our two co-chairs, provided rapid and real-time advice on the scientific validity and efficacy of proposed solutions. Bringing this scientific expertise and capacity to address a key issue like microplastic pollution is core to OST's purpose and commitment to being responsive to the needs of California.

Read project lead [Kiya](#) and [Dom's](#) reflections on the project for its impact on the OST team.





## Expert panel shapes ocean acidification funding priorities

In 2021, OST continued to facilitate independent scientific convenings to help shape funding priorities in relation to Ocean Acidification and Hypoxia (OAH) monitoring, building on the [latest work of the OAH Science Task Force](#). On behalf of the Ocean Protection Council, OST convened a rapid response expert panel to produce [recommendations](#) for better coordination and integration of biological and chemical measurements in OAH monitoring.

This effort guided \$1.5M in investments by OPC to Scripps Institution of Oceanography, Southern California Coastal Water Research Project, and Central and Northern California Ocean Observing System to implement enhanced and standardized biological and chemical measurement across various ongoing OAH monitoring programs. These projects aim to catalyze statewide biological and chemical monitoring coordination, with the potential to provide early warnings of the biological impacts of OAH on commercially important marine life, and support ongoing efforts by the State Water Resource Control Board to develop ecosystem-relevant OAH water quality criteria



## Securing effective MPA management in a changing climate

Two expert working groups of the OPC Science Advisory Team delivered science guidance to the Ocean Protection Council and the California Department of Fish and Wildlife, culminating a nearly two-year effort to inform adaptive management of the statewide MPA network and inform the upcoming decadal evaluation.

[“Scientific Guidance for Evaluating California’s Marine Protected Area Network”](#) delivers a socio-ecological framework to guide decadal evaluations of California’s MPA network and articulates recommendations for near and long-term investments in research and monitoring to support robust network evaluations.

[“Climate Resilience and California’s Marine Protected Area Network”](#) provides an overview of climate change impacts and scenarios for the California Current, catalogs potential mechanisms and evidence by which MPAs could provide resilience to climate change, suggests research that could guide our detection and understanding of climate resilience in California’s MPAs, and recommends a set of actions to support a climate-resilient MPA network.

[Searching for resilience in 2020](#), by Hayley Carter



# Partners

California Council on Science and Technology (CCST)

California Department of Fish and Wildlife

California Department of Insurance

California Fish and Game Commission

California Ocean Protection Council

California Sea Grant

Coastal and Marine Sciences Institute, UC Davis

Coastal Science & Policy Program, UC Santa Cruz

COMPASS

CSU Council on Ocean Affairs, Science, and Technology (COAST)

Estuary and Ocean Science Center, San Francisco State University

Ocean Conservancy

Oregon State University

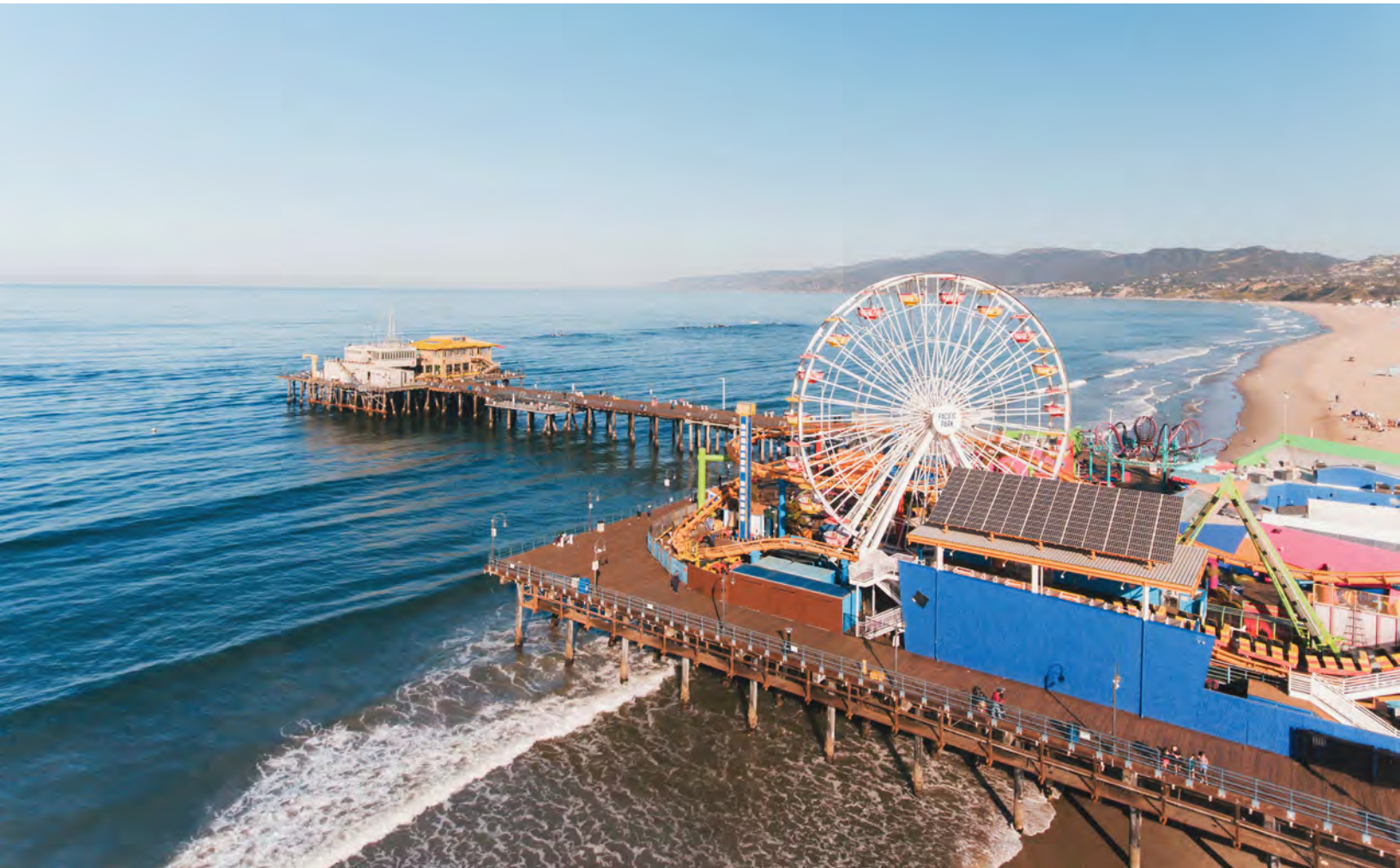
San Diego State University

Southern California Coastal Water Research Program (SCCWRP)

UC Center, Sacramento

US Fish & Wildlife Service

USC Sea Grant





# Funders

Through December 31, 2021

Your support helps bring this work to life.  
As an independent nonprofit, OST is proud to serve as a cost-effective investment with accountability to the state and academia, and to leverage public and private support to amplify outcomes.

## **\$250,000+**

California Ocean Protection Council

## **\$100,000+**

Alfred P. Sloan Foundation  
Lenfest Ocean Program  
NOAA Ocean Acidification Program  
University of California, Davis

## **\$50,000+**

The David and Lucile Packard Foundation  
Honda Marine Science Foundation  
Paul Angell Foundation  
The William & Flora Hewlett Foundation

## **\$25,000+**

Pew Charitable Trusts  
Resources Legacy Fund  
United States Fish & Wildlife Service

## **\$10,000+**

Change Happens Foundation  
Julie Packard Lendistry  
Peter Read & the Otter Cove Foundation  
Rodgers-Repas Foundation

## **\$7,500+**

Nancy Sutley, *in honor of Bruno & Sara Sutley*

## **\$5,000+**

Phillip Taylor

## **\$2,500+**

Emmett Foundation  
Margaret Spring

## **\$1,000+**

Colligan Family Charitable Trust  
Gary Griggs  
Fred Keeley

Margaret Leinen  
Karina Nielsen  
Mariko Powers, Ocean Kind

## **\$500+**

Charles Gardner  
Liz Whiteman

## **\$250+**

Alena Ebeling-Schuld

## **\$100+**

Hilary Bryant  
Sandy Brown  
Ann Kapuscinski  
Emily Knight  
Don Lane  
Ronnie Lipschutz  
Steve Murray  
Matthew Vieyra  
Lori Zook

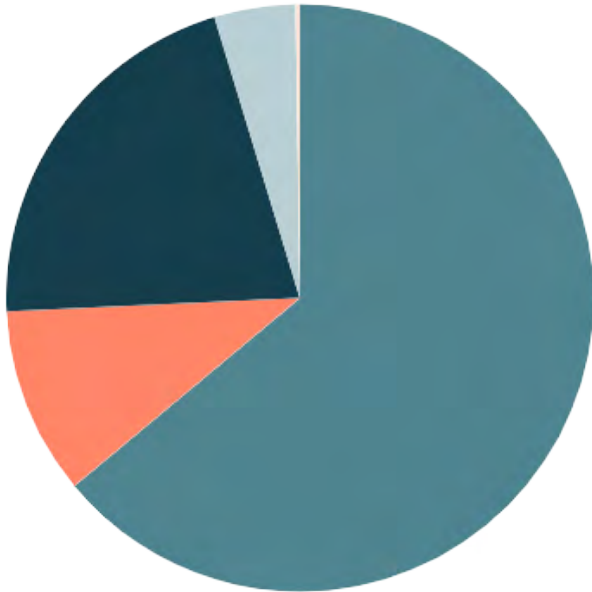
## **\$50+**

Erika Koch



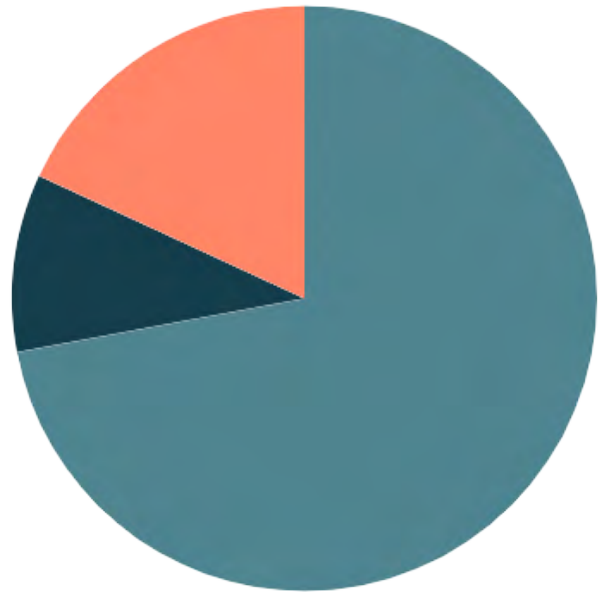
# Financials

Revenues  
\$871,082



- Program Grants \$183,222
- Government Contracts \$556,949
- Investment Income \$1,994
- Individual Donations \$38,914
- Other \$90,003

Expenses  
\$1,364,999



- Fundraising \$134,169
- Program Services & Grants \$983,590
- General Administration \$247,240

Operating reserve: \$1,432,346

Financials cover the fiscal year October 1, 2020 - September 30, 2021

Financials are audited on a biennial basis; complete audited financial statements will be available upon request.





# Board

## **Nancy Sutley**

Board of Trustees Chair, Public Representative  
Senior Assistant General Manager of External and Regulatory Affairs; and Chief Sustainability Officer  
LADWP

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California Environmental Protection Agency Representative  
Chief Deputy Director, State Water Resources Control Board

## **Dr. Mark Gold**

California Natural Resources Agency Representative  
Deputy Secretary for Ocean and Coastal Policy, California Natural Resources Agency

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University of California / California State University Representative  
Distinguished Professor of Earth Sciences, University of California, Santa Cruz

## **Dr. Alexis Jackson**

Ocean and Coastal Interests Group Representative  
Ocean Policy and Plastics Lead, The Nature Conservancy, California chapter

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University of California / California State University Representative  
Vice Chancellor for Marine Sciences, UCSD; Director, Scripps Institution of Oceanography

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Department of Finance Representative  
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Professor and Director, Estuary & Ocean Science Center, San Francisco State University  
(as of June 1, 2022: Director, Oregon Sea Grant)

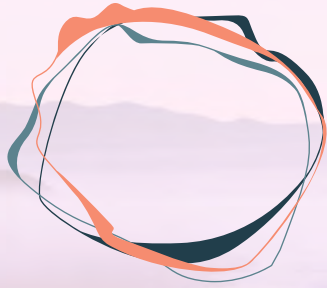
## **Margaret Spring**

Public Representative  
Chief Conservation and Science Officer, Monterey Bay Aquarium

## **Dr. Phil Taylor**

Treasurer, Ocean and Coastal Interests Group Representative  
Associate Dean for Research Advancement Dornsife College of Letters, Arts & Sciences, USC, *retired*





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