

bay.org



bayecotarium™

ANNUAL REPORT 2020-2021



ACKNOWLEDGMENTS

We are grateful to our Donors, Patrons, Sponsors and Members who have continued to support our programs through one of the most difficult years in the 25-year history of the Aquarium of the Bay. Our wonderful staff, many of whom faced furloughs due to the pandemic shelter-in-place Public Health Directives, for their dedication, care, and hard work in nurturing the 24,000 animals in our collections. Our Board of Directors have remained alert to the fiscal challenges and emergency measures that we proactively put in place. Our external partners and international collaborators have demonstrated great faith in our ability to deliver amid adversity and challenges, that has continued to strengthen our resolve and explore new solutions and opportunities. We are thankful to our advisors and in-kind supporters for helping us stay the course on our mission.

Copyright 2021 © BayEcotarium / bay.org

Content: Department Directors

Design/Layout: Studio Aqua/Brian Harris





The background is a vertical gradient from a light teal at the top to a dark blue at the bottom. Two jellyfish are illustrated in a light blue, sketchy style. One is in the upper left, and a larger one is in the lower right. The word 'CONTENTS' is written in white, bold, sans-serif capital letters, centered over the larger jellyfish.

CONTENTS

06

BOARD OF
DIRECTORS

14

OVERVIEW

08

ADVISORS &
AMBASSADORS

136

THE BAY INSTITUTE

38

AQUARIUM
OF THE BAY

10

EXECUTIVE
LEADERSHIP

142

BAY MODEL
ALLIANCE

100

STUDIO AQUA

12

MESSAGES

144

BAY ACADEMY

126

SEA LION CENTER

158

2021 DONORS
AND MEMBERS

146

ECOXPEDITIONS

170

FINANCIAL
REPORT 2020

BOARD OF DIRECTORS



BEN BLEIMAN
Chair



ROSALIND JACKSON
Secretary



STEVEN MACTINGER
Treasurer



ANGELIQUE TOMPKINS



HARRISON DUNNING



JJ HENLEY



KAY CARNEY



EDWARD UEBER



SHAILESH SHUKLA



JACQUELINE MILLER



DEAN MOREHOUS



ADVISORS/AMBASSADORS



DR. PAUL AUERBACH

Redlich Family Professor at Stanford University
Adjunct Professor of Military/Emergency
Medicine at the Uniformed
Services University of the Health Sciences

Obituary: Dr. Paul Auerbach (1951-2021)

We learned this year of the untimely passing of one of our Advisors, Dr. Paul Auerbach, MD, of brain cancer. A legend in Emergency Medicine, he provided a voice of calm and expertise in countless disasters around the world. He was 70. His last email to me was days before his demise, expressing interest in coming to the Blue Marble event with his wife and contributing to our mission. One of the founders of wilderness medicine, Auerbach, a longtime professor of emergency medicine at the Stanford University School of Medicine, researched

and advocated for sports head injury prevention, wrote about climate change and its effect on health, and was an expert in disaster medicine. He helped us with our COVID-protocols and is featured in our videos. His generous contributions to the Aquarium and his speech at the 2018 Blue Marble held at the Bently Reserve with Dr. Jill Biden will be remembered for its message of urgency and hope. May his soul rest in Peace Eternal and may his work and initiatives around the world continue to enrich the lives of the underprivileged.



DR. SYLVIA EARLE

National Geographic Explorer in Residence
Founder, Mission Blue; Deep Ocean
Exploration and Research



JOHN GEIGER

Chief Executive Officer
Royal Canadian Geographical Society



DR. YVONNE CAGLE

NASA Astronaut, Johnson Space Center's Space
and Life Sciences Directorate
Advisor, NASA Flight Opportunities Program



DR. CONRAD LAUTENBACHER
Retired Navy Vice Admiral; Former Under
Secretary for Oceans and Atmosphere;
Eighth Administrator, NOAA



DR. DANIEL KAMMEN

Professor, Energy (UC Berkeley); Goldman School
of Public Policy; Dept. of Nuclear Engineering
Founding Director, Renewable and Appropriate
Energy Laboratory



BRIAN BAIRD

Assistant Secretary, Ocean & Coastal Policy,
State of California; Former Director, Coast &
Oceans Program, The Bay Institute



SUDHA PENNATHUR

Sudha Pennathur LP Collections



M.R. RANGASWAMI

Founder Chairman, Corporate
Eco Forum



DR. BRANDEN BROUGH

Deputy Director, Molecular Foundry
Lawrence Berkeley National Laboratory



JASON CHAN

Vice President of
Asian Leaders Alliance



GEORGE ORBELIAN

Buckminster Fuller Institute



DR. SAM MOLYNEUX

Former Managing Director,
Chan Zuckerberg Initiative
Co-founder and Co-CEO,
Poppy



EXECUTIVE LEADERSHIP



GEORGE JACOB FRCGS
President & CEO



PAUL NAKAMOTO
Vice President
Guest Experiences



JAZ CARIOLA
Director, Guest Services



VICKI DE WITT
Executive Assistant



GARY BOBKER
Director, Rivers &
Delta Program



CHRIS LOW
Director, Facilities &
Life Support Systems



ANGELINA PREZA
Director, EcoXpeditions



PATRICK DORAN
Director, IT Services



TEPPEI TOKURA
Assistant Controller



HANNAH WOODALL
Manager, Events and Tourism



KEVIN McELIGOT
Associate Director, Animal Care



HUNTER COUGHLIN
Manager, Studio Aqua
Multimedia & Promotions



MELISSA SCHOUEST
Director, Animal Care



PHILLIP KEELING
Director, Institutional
Advancement



BRIAN HARRIS
Senior Manager, Studio Aqua
Web & Graphic Design

GLOBAL COLLABORATIONS





MESSAGE FROM CHAIR, BOARD OF DIRECTORS

December 14, 2021

Dear Friends of BayEcotarium:

As a business owner in San Francisco and in my capacity as the Chair of the Entertainment Commission of San Francisco, I experienced the crushing impact of COVID-19 pandemic that affected small businesses, entertainment, hospitality, and tourism destinations across the board. With cancellation of conferences, cruise ships, and business travel coupled with remote working, the city turned to empty streets and a cascading string of closures. The Aquarium of the Bay, unlike many museums and indoor attractions, had a bigger challenge on their hands with 24,000 live animals on life-support systems and 24/7 animal and veterinary care linked to a unique supply chain of food.

What the team managed to accomplish in the worst crisis in their 25-year history is nothing short of a miracle. Not only did we shift gears into the online front facing mode with programs and learning outreach, but we also branched out internationally - seeking projects designing and master-planning other institutions to augment sources of revenue and retaining staff on payroll. What was more remarkable was that during this period of shut-down, we leveraged their focus to restructure debt, extend their lease terms, cross-train personnel and reduce administrative overheads. The results were amazing when the Aquarium fully re-opened after nearly 15 months of shutdown. Using a combination of conferences, webinars, podcasts, TV interviews, NPR presentations, unique NFT auctions, EcoStore online merchandise, designer COVID-masks, publications and events, the Aquarium remained in the public eye, soliciting donors, sponsors, members, and patrons.

We are strengthening our Board and deepening our reach to engage our advisors and ambassadors as we seek new partnerships and collaborations. We look to your generous support in helping us continue to meet our mission of protecting and saving the San Francisco Bay and its fragile ecosystems from Sierra to the Sea.

As the year draws to an end, I am pleased to share that we have not only stabilized our operations, but have turned a new leaf, with one of the best years in our history, with more to come!

Sincerely,

Ben Bleiman

Chair, Board of Directors, BayEcotarium
San Francisco Entertainment Commissioner





MESSAGE FROM PRESIDENT & CEO

December 14, 2021

Dear Members, Patrons and Friends:

2021 has shown steady improvement in our operations and our ability to turn the tide and overcome many of the unprecedented challenges of the pandemic infused preceding year that saw the tourism industry crumble and indoor destinations shut.

Not only did we invest our time and strategic resources in improving our infrastructure, add new species to our animal collection, augment exhibit content, merchandise and education programs, we also revamped our method of delivery and transformed our business model. Cross-training and exploring new methods of optimizing resources, we successfully leveraged social media and content platforms to expand our outreach and cyber presence. Each month we enhanced our staffing levels, and we are now well on our way to a full recovery of our operations, education and outreach programs. We continue to collaborate on stellar international projects and became the only aquarium in the nation to be tapped into designing and master-planning world-class destinations for institutions in Norway, Jamaica and Scotland, with more to come. Your continued support has been a great source of strength for all of us.

Grammy winners came together to write us a song dedicated to the BayEcotarium, as we mark the 40th Anniversary of the Bay Institute and the 25th Anniversary of the Smithsonian Affiliated Aquarium of the Bay with multiple peer recognized awards, publications, books and synergistic global initiatives, turning adversity into our finest year yet!

We look forward to a wonderful and promising 2022.

Stay tuned. Stay Connected.

George Jacob FRCGS
President & CEO, BayEcotarium

Board of Directors, ICOM-US

Board of Directors, Bay Area Council

Board of Directors, US Travel

Board of Directors, Cal-Travel

Fellow, Royal Canadian Geographical Society

Chief Advisor, UN Environment (Caribbean) Climate Museum Initiatives



EXECUTIVE SUMMARY

This year marked our 40 years of environmental advocacy through the Bay Institute policy work, and the 25th anniversary of ocean conservation through the Aquarium of the Bay programs and initiatives. Overcoming the seemingly insurmountable challenges of 2020, this year has been a testament to our collective resolve to turn the tide. The Aquarium re-opened to the public at 25% visitor cap, plunging us further into the fiscal crisis as our overheads and staffing levels went up, while the revenues barely crossed the 10% threshold.

However, this changed dramatically when the City Public Health finally allowed us to re-open at 100% capacity in mid-June. We soon witnessed long unprecedented lines of visitors and a diverse demographic drawn from the 200-mile radius around the Bay Area. The trend continued to show an upswing surge for the next three months, even as we kept a strict vigil on our internal COVID protocols for safety and sanitation. Research work on sevengill sharks, COVID vaccinations for river otters, transportation of wolf eels bred at the Aquarium to institutions around the world, new exhibits on climate change, papers and publications continued at full pace behind the scenes. Capital improvements in our life support systems, new exhibits, and online merchandise design saw a significant uptick.

On June 8, 2021- World Ocean Day- we became the first non-profit in the Bay Area to hold an in-person event graced by the Lt. Governor of California Eleni Kounalakis and the former Prime Minister of Greece, George Papandreou delivering the Keynote at the 28th TBI Awards and the Blue Marble Benefit where we honored the

first Director of the Aquarium, Michael Gallagher, among others. In July, we were invited to meet the Prime Minister of Jamaica where we unveiled our Master Plan to develop a world-class \$132 million Oceanarium in Montego Bay. This year also marked the completion of Phase 2 of our Oceanarium business analysis for Norway.

We successfully launched our seventh division - EcoXpeditions - a curated ocean diving underwater photography, field research-based curated five-day module in Hawaii with 16 high-school kids participating from Atlanta, Georgia. This was the first such partnership with an aquarium on the East Coast for us on the West Coast. Other expeditions are planned for Costa Rica, Baja, Florida Keys, Greece, and Galapagos in the coming months. Dr. Sylvia Earle held the release of her new National Geographic Book, OCEAN: A Global Odyssey at the Bay Model, where we hosted 300 guests from across the US and abroad.

The UN COP26 Climate Summit in Glasgow led to an announcement from the City of Inverclyde to collaborate with us to start work on a World Climate Museum in Victoria Harbor, Greenock. Accolades of our efforts came from near and far, with the Aquarium of the Bay winning the Best of the Best in Bay Area Family Destination Award followed by the 2021 California Travel Association Sustainability Advocacy Award.

With Google-X and Google Cloud AR/ VR partnership to develop e-learning modules on the anvil, we look forward to a promising 2022 ahead!

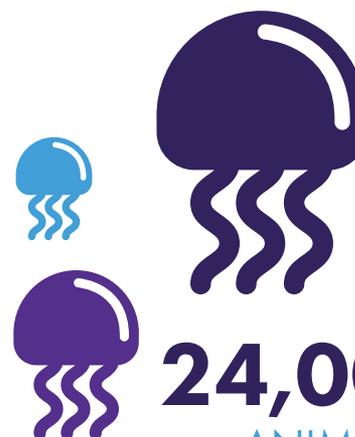
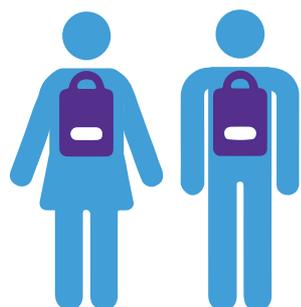
A stylized graphic of waves in shades of blue and green, positioned behind the text.

**BAYECOTARIUM IS THE
LARGEST NON-PROFIT (501C3)
CONSERVATION GROUP IN THE
SAN FRANCISCO BAY AREA
COMMITTED TO CLIMATE
RESILIENCE AND OCEAN
CONSERVATION, TO PROTECT
AND PRESERVE BIODIVERSITY
AND ECOSYSTEMS, FROM
SIERRA TO THE SEA™**

40 YEARS OF ACHIEVEMENTS

**1.9 MILLION
CHILDREN**

FREE STEAM
EDUCATION PROGRAM



24,000+

ANIMALS

225

SPECIES IN OUR CARE

13.5 MILLION

VISITORS

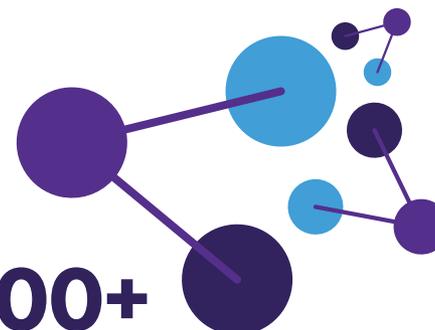


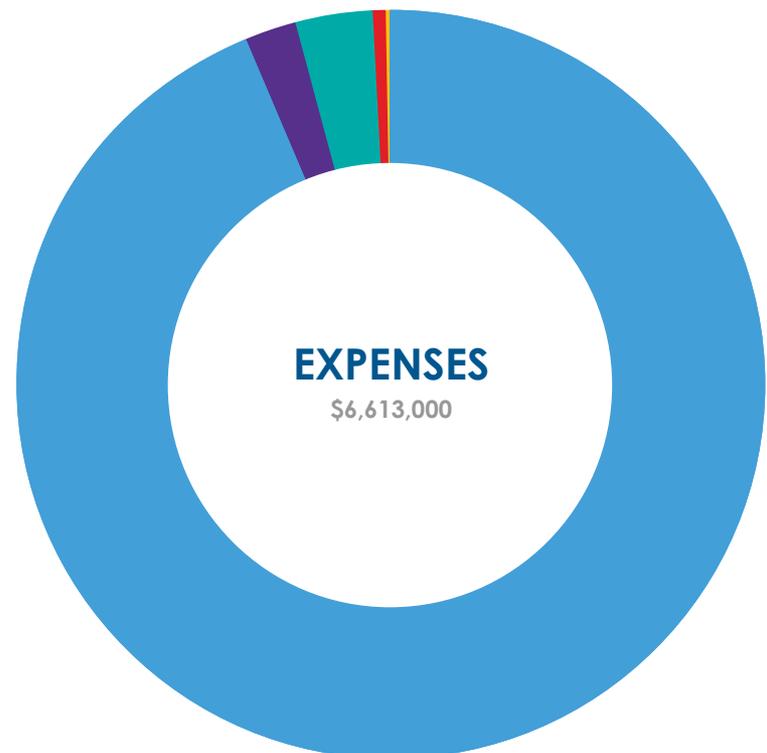
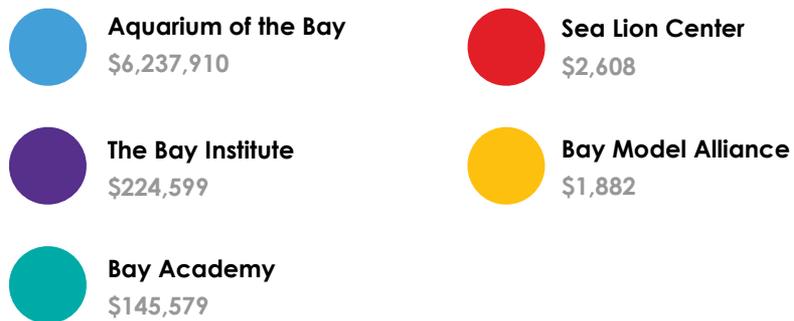
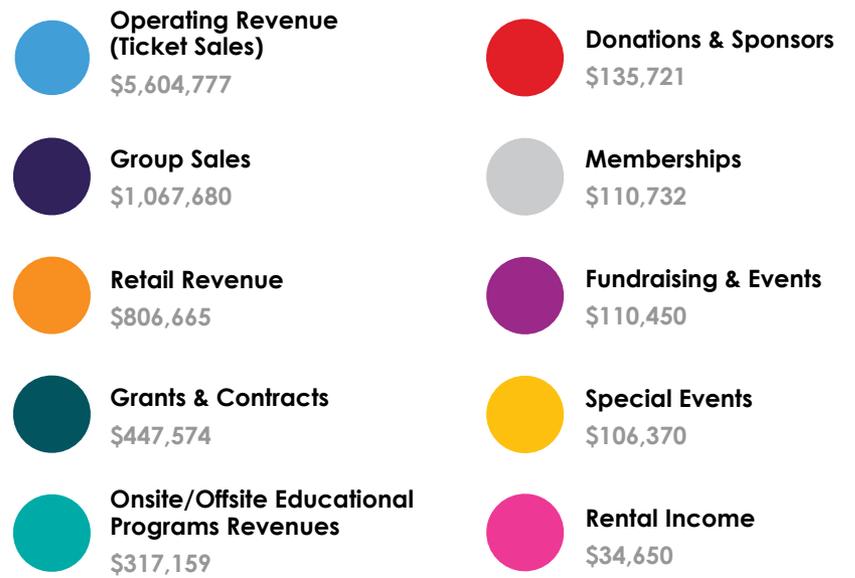
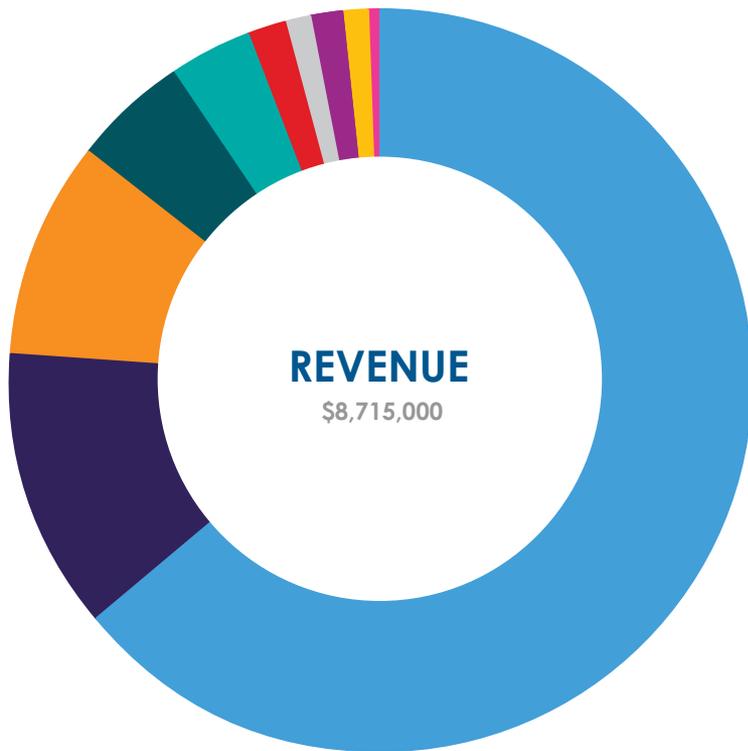
10,000 LBS.

TRASH REMOVED FROM
BAY SHORELINE

70,000+

NETWORK FOLLOWERS





*Financial numbers include estimates for Q4 2020





bayecotarium
SAN FRANCISCO



WASHINGTON D.C.

SCOTLAND



BERGEN



OSLO

PARIS

GENEVA

GREECE

HAWAII



CABO PULMO

COSTA RICA

COLOMBIA



JAMAICA

ST. LUCIA

GRENADA

TRINIDAD & TOBAGO



CAPE TOWN

INTERNATIONAL OUTREACH



SEOUL

TOKYO

DUBAI

HONG KONG





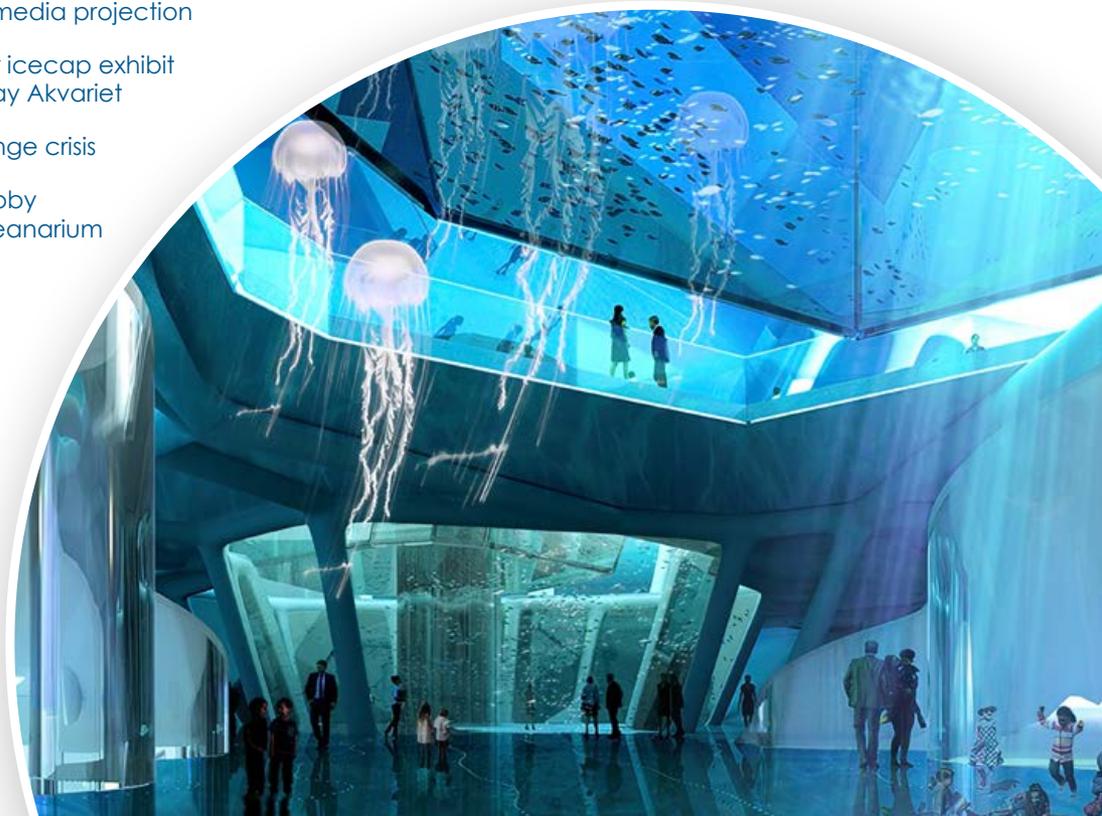
INTERNATIONAL OUTREACH



During the pandemic, the Aquarium began an international outreach program collaborating with a multitude of institutions extending our expertise in master planning, interpretive planning, functional planning, exhibit concept development, field research, and generating education programs. These initiatives have had a tremendous positive impact on the organization. Apart from enhancing the international profile, it has provided a learning platform to the staff, offered wonderful exposure, generated secondary sources of revenue, and leveraged internal talent to impact other parts of the world including Jamaica, Norway, Greece, Scotland, Japan, India, Dubai, and Hong Kong, among others.

In Norway, our work on the new national Aquarium in Ocean City Bergen, has moved from the completion of the functional brief to the completion of a comprehensive business plan. As we await the announcement for exhibit design-build services and architectural design-build services, we were part of the jury to re-brand the new national Aquarium. In Jamaica, we completed the detailed master plan for the Oceanarium in Montego Bay. Our team was invited to present this legacy project directly to the Prime Minister of Jamaica, His Excellency Andrew Holness, Minister of Tourism & Hospitality and the Minister of Climate Change & Environment, Fisheries & Oceans. The project was approved for \$132 million and was followed by the award of the next phase of the project focused on business and risk analysis.

1. Jellyfish multimedia projection
2. Melting polar icecap exhibit design Norway Akvariet
3. Climate change crisis
4. Immersive lobby Jamaica Oceanarium



XTU



▲ George Jacob presenting the Jamaica Oceanarium Master Plan to Prime Minister of Jamaica, his excellency Andrew Holness, flanked by Minister of Tourism and Hospitality, Hon. Edmund Bartlett and Minister of Environment and Climate Change, Hon. Parnell Charles Jr.



▲ Mangrove exhibit concept



▶ Jamaica Oceanarium scale model



INTERNATIONAL OUTREACH

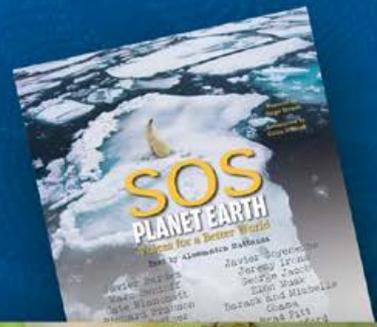
On the eve of the conclusion of the United Nations Climate Summit COP26 in Glasgow on November 10, 2021, Scotland announced a collaborative partnership with the BayEcoarium to establish a World Museum of Climate & Oceans at the Victoria Harbor site in Inverclyde/Greenock. Many of the voices of reason to save the planet from around the world were featured in a new National Geographic book, *SOS Planet Earth*, with the foreword by the President of the World Economic Forum.

1. Former First Minister of Scotland, Alex Salmond, and George Jacob, President and CEO of BayEcoarium, holding a copy of "*SOS Planet Earth: Voices for a Better World.*"
2. Construction site for Scotland World Museum on Climate & Oceans



SOS PLANET EARTH

VOICES FOR A BETTER WORLD



Michelle &
Barack Obama



Jane Goodall



Børge Brende



Greta Thunberg



George Jacob



Marc Benioff



Cate Blanchett



Kevin Costner



Leonardo DiCaprio



Matt Damon



Robert Redford



Richard Branson



STING &
Trudie Styler



Elon Musk



Javier Bardem



Jaden Smith



Marion Cotillard



Brad Pitt



Harrison Ford



Jeremy Irons

V O I C E S O F R E A S O N

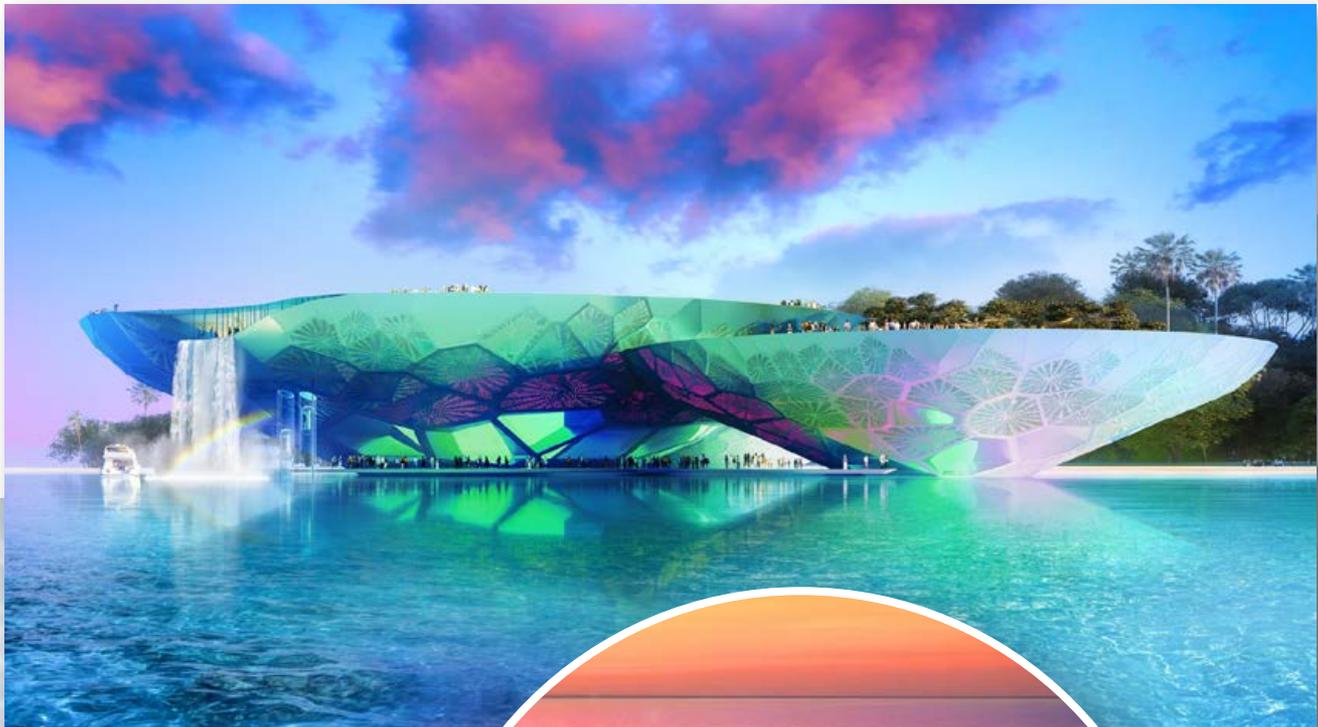


INTERNATIONAL OUTREACH

Aquarium of the Bay develops Jamaica Oceanarium Master Plan

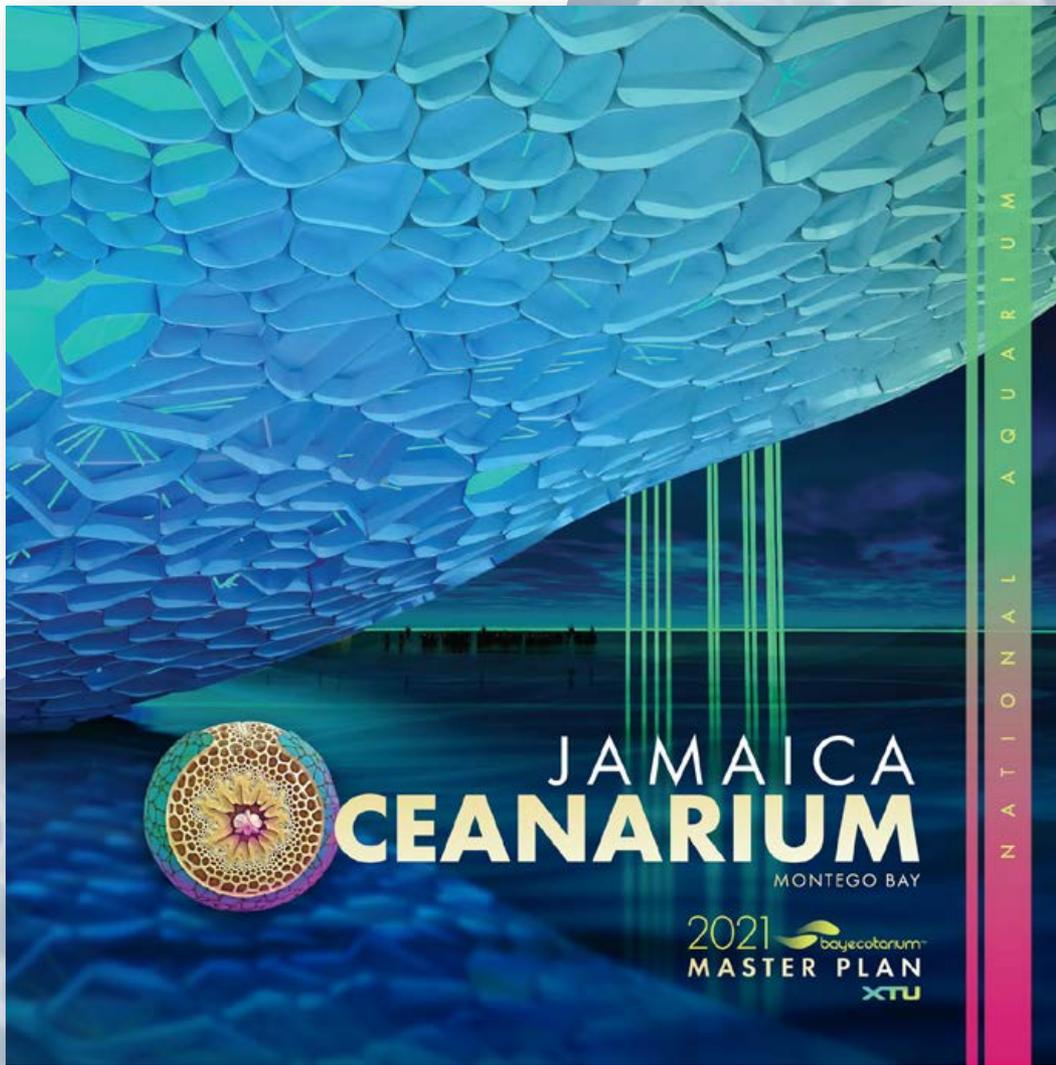
Led by BayEcoarium in San Francisco, an international team of experts developed and delivered a comprehensive Master Plan in record time to the Urban Development Commission (UDC) of Jamaica. This culminated an in-person presentation to Prime Minister Andrew Holness on July 1, 2021. The Presentation was attended by, among others, the Managing Director of UDC as well as Ministers of Climate & Environment

and Tourism & Hospitality. The Prime Minister expressed his support in principle to this initiative and recommended a Business Case Risk Analysis Study to commence in conjunction with exploring a viable P3 (Public-Private Partnership) in the context of challenges faced by diminishing market-cap of the tourism and hospitality sectors in the post-COVID scenario.

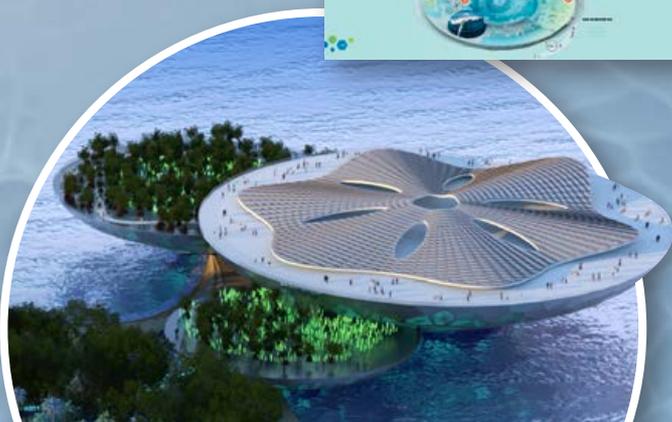
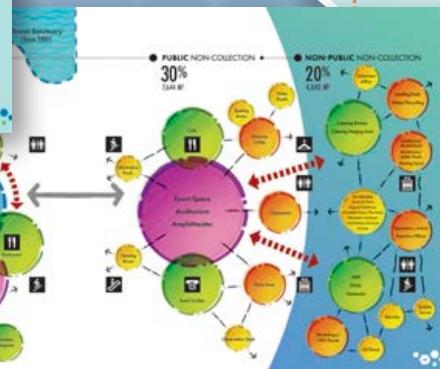
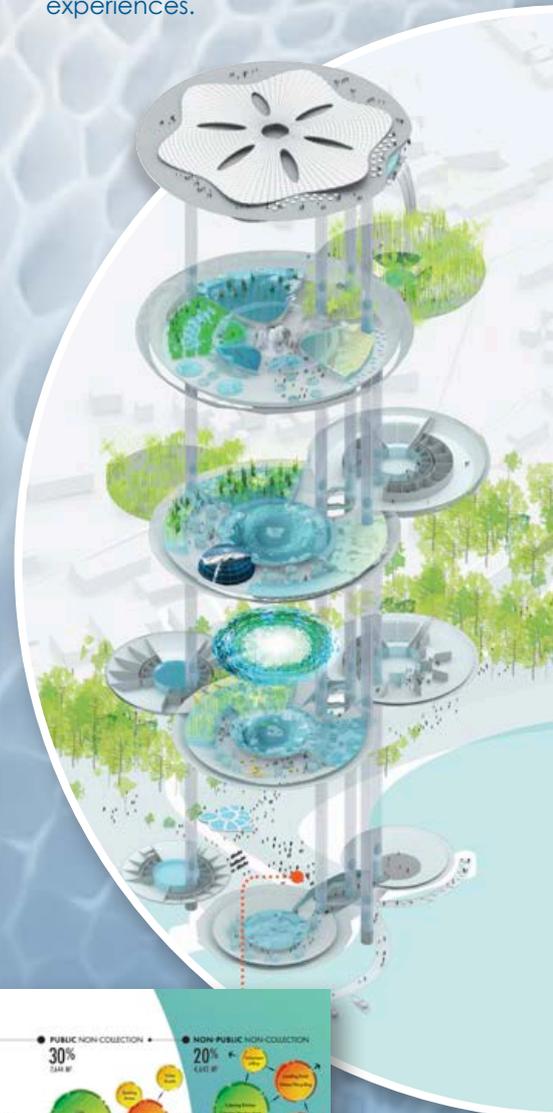


Concept images pulled from the master plan. The creative use of space and natural light is a staple of the Oceanarium's design.





Cross-section of the proposed Jamaica Oceanarium. All five levels will be spacious and offer unique experiences.



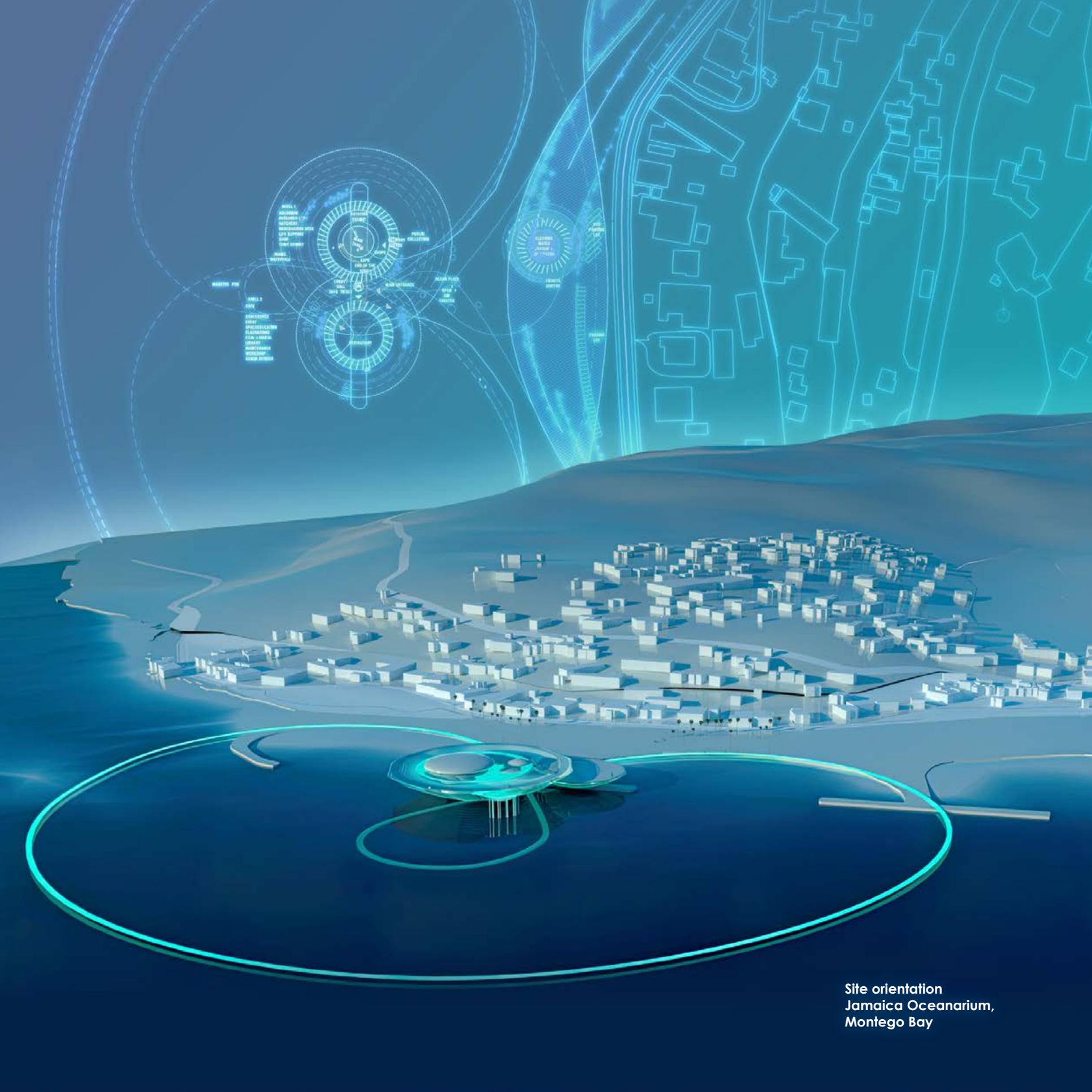


**JAMAICA OCEANARIUM
MASTER PLAN: CONCEPT DESIGN**





Cascading magic
waterfall Jamaica
Oceanarium



Site orientation
Jamaica Oceanarium,
Montego Bay



Aquarium of the Bay team visits Jamaica for presentation of Master Plan to Prime Minister Andrew Holness.





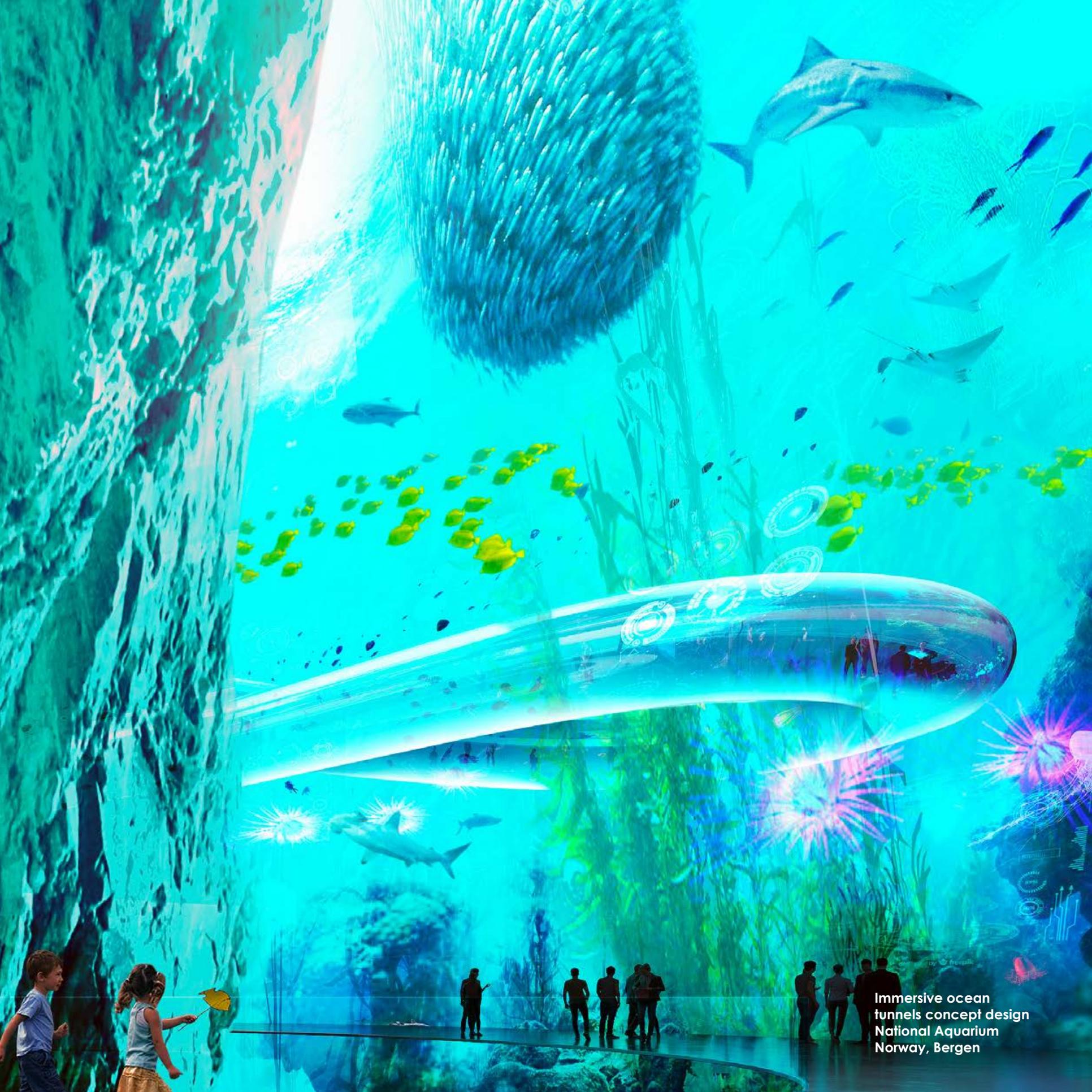
From left to right: Hunter Coughlin, Melissa Schouest, George Jacob, Chris Low, Paul Nakamoto, and Dayne Buddo after a successful meeting with Jamaica's Prime Minister and Cabinet to discuss the project. They visited the proposed site of the Jamaica Oceanarium and embraced the local culture.



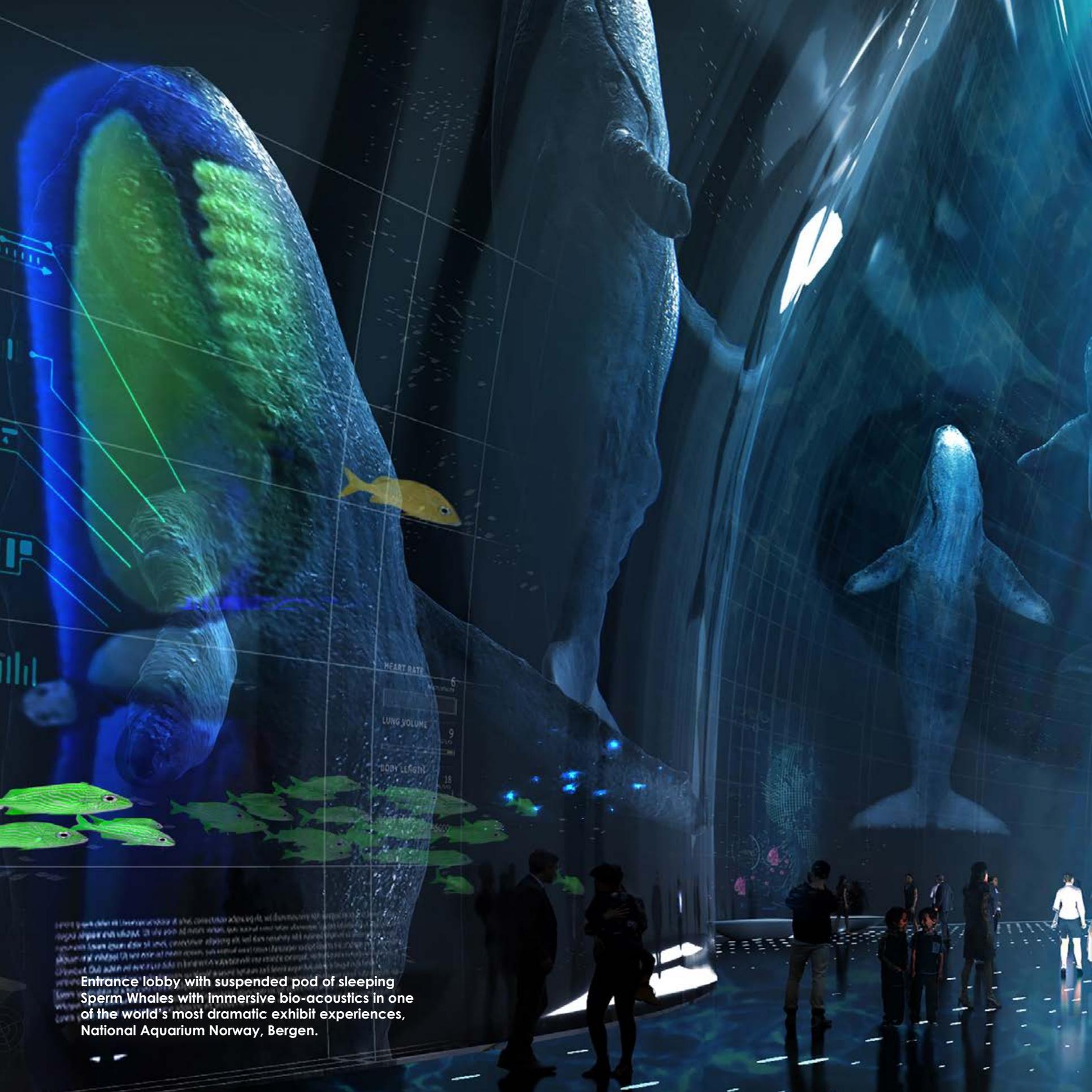


AKVARIET
I BERGEN
THE NATIONAL AQUARIUM

2020  **FUNCTIONAL BRIEF**

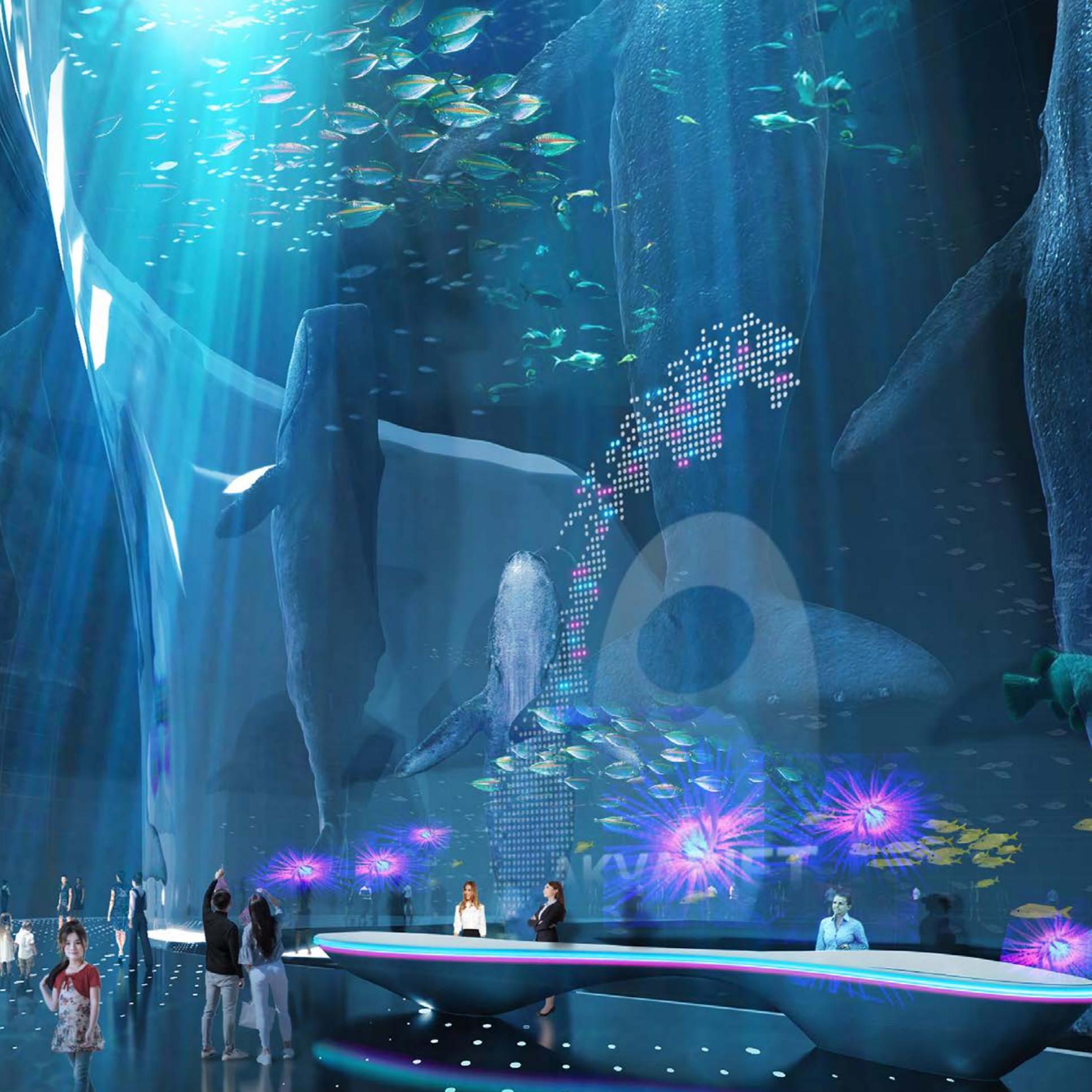


Immersive ocean
tunnels concept design
National Aquarium
Norway, Bergen



HEART RATE
6
LUNG VOLUME
9
BODY LENGTH
18

Entrance lobby with suspended pod of sleeping Sperm Whales with immersive bio-acoustics in one of the world's most dramatic exhibit experiences, National Aquarium Norway, Bergen.



8 Grammy winning / nominee musicians came together to create and dedicate a song inspired by the BayEcotarium. Its mission aligned composition is a testament to the urgency to protect the oceans that sequester carbon, sustain life, and mitigate climate change.



STEWART COPELAND

(The Police,
5X GRAMMY® Winner)



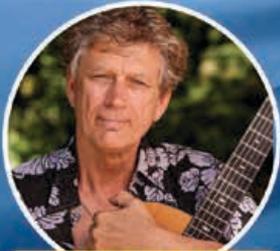
RICKY KEJ

(GRAMMY®
Award Winner)



DARLENE KOLDENHOVEN

(GRAMMY®
Award Winner)



JIM KIMO WEST

(GRAMMY®
Award Winner)



JON SAMSON

(GRAMMY®
Award Winner)



RON KORB

(GRAMMY®
Award Nominee)



VARSHITA RAMESH

Singer | Songwriter



LONNIE PARK

(GRAMMY®
Award Nominee)

BE THE MOVEMENT
The BayEcotarium Song

TE GLOBAL SUMMIT
DUBAI - 2021



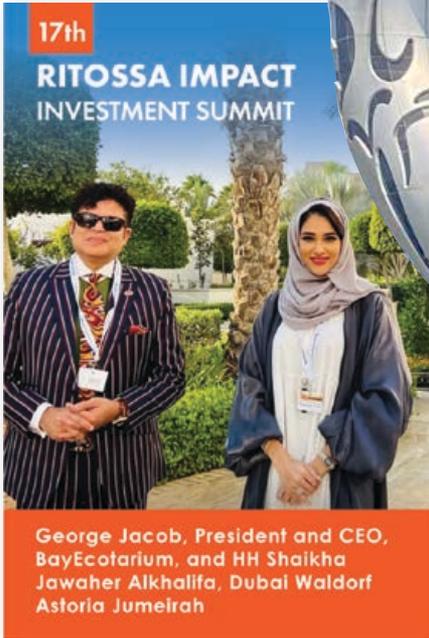
GEORGE JACOB
PRESIDENT AND CEO OF BAY ECOTARIUM

#CONSERVATION #SUSTAINABILITY
#VISION #FUTURE #CLIMATECHANGE
#SCIENCECENTER

REGISTER FOR YOUR INVITE AT
TE2021.ORG

17th

RITOSSA IMPACT INVESTMENT SUMMIT



George Jacob, President and CEO, BayEcotarium, and HH Shaikha Jawaher Alkhalifa, Dubai Waldorf Astoria Jumeirah

Capital Club
Dubai

FIRESIDE CHAT WITH GEORGE JACOB



Moderated by
Talq Qureshi
Kulali & CEO
Apontika

George Jacob, FRCGS is the President & CEO of the Smithsonian Affiliated Bay Ecotarium and its seven branches in San Francisco celebrating 40 years of environmental stewardship and advocacy. With over 100 museum assignments around the world and an author of 10 dozen books on the future of museums, he is one of leading museum thinkers of our times. He currently spearheads a landmark transformation of the Aquarium on The Embarcadero into a \$260 million environmental edifice on Climate and Sustainable Oceans. The fireside chat moderated by Talq Qureshi would bring the depth and breadth of his insights and perspectives to the fore, as UAE prepares to host world leaders and global voices of Climate Awareness and Action at the UN COP 26 in 2023.

12TH DEC 2021 6:30PM TO 8PM

LIMITED SPACES - BOOK NOW | RSVP@capitalclubdubai.com | +971 4 364 0111
Gate Village, Building 3, Dubai International Finance Centre, DIFC, Dubai, United Arab Emirates

H.E. Khalfan Belhouf, CEO of Dubai Future Foundation, and George Jacob, President and CEO of BayEcotarium, stand outside the Museum of the Future, Dubai.





AQUARIUM OF THE BAY

ELEVATOR

30 YEARS
AT THE PARK

FOR YOUR SAFETY
Please do **NOT** climb
on the Sea Lion statues.

SEALIONLOVE.ORG



▲ BayEcotarium Board of Directors Chair Ben Bleiman and President & CEO George Jacob present Senior Animal Care Biologist & Collections Coordinator Mike McGill with a gift to honor his 25 years of service at Aquarium of the Bay.

▶ Chris Low, Director of Facilities, is also celebrated for his 25 years of dedicated work for the Aquarium. Chris and Mike also received a commemorative Tissot sports watch.





AQUARIUM OF THE BAY

ANIMAL CARE

With the Aquarium of the Bay reopening at 100% on June 14, 2021 to visitors, the Animal Care team set out to reach and surpass many milestones in our mission to provide the highest level of care for the animals within our 24,000 living collections, while supporting the organization through these unprecedented times.

For 25th anniversary of the Aquarium, Animal Care brought in 25 new species for the spring reopening, showcasing many new and interesting animals for members and visitors. The Animal Care team integrated these new arrivals into the existing collection, enhancing the exhibits and the visitor experience as the Aquarium reopened in the spring. With the Aquarium reopening, we were able

to conclude many projects that begun while doors were closed, from deep cleaning some exhibits to breaking down and rebuilding others for improvement and repair.

The pandemic and ensuing shutdown caused continued challenges to many operational facets of our team, including the volunteer program that is crucial to the well-being of our animals. With that program coming to a virtual standstill, the Animal Care team took on the challenge and succeeded in restarting it this year by recruiting over 40 volunteers who have volunteered a total of over 2,800 hours. Of those, just over 2,200 have been diving hours. Those hours represent over 91 days of underwater feeding, cleaning, and assisting us in the care of the living collection in the main exhibits.

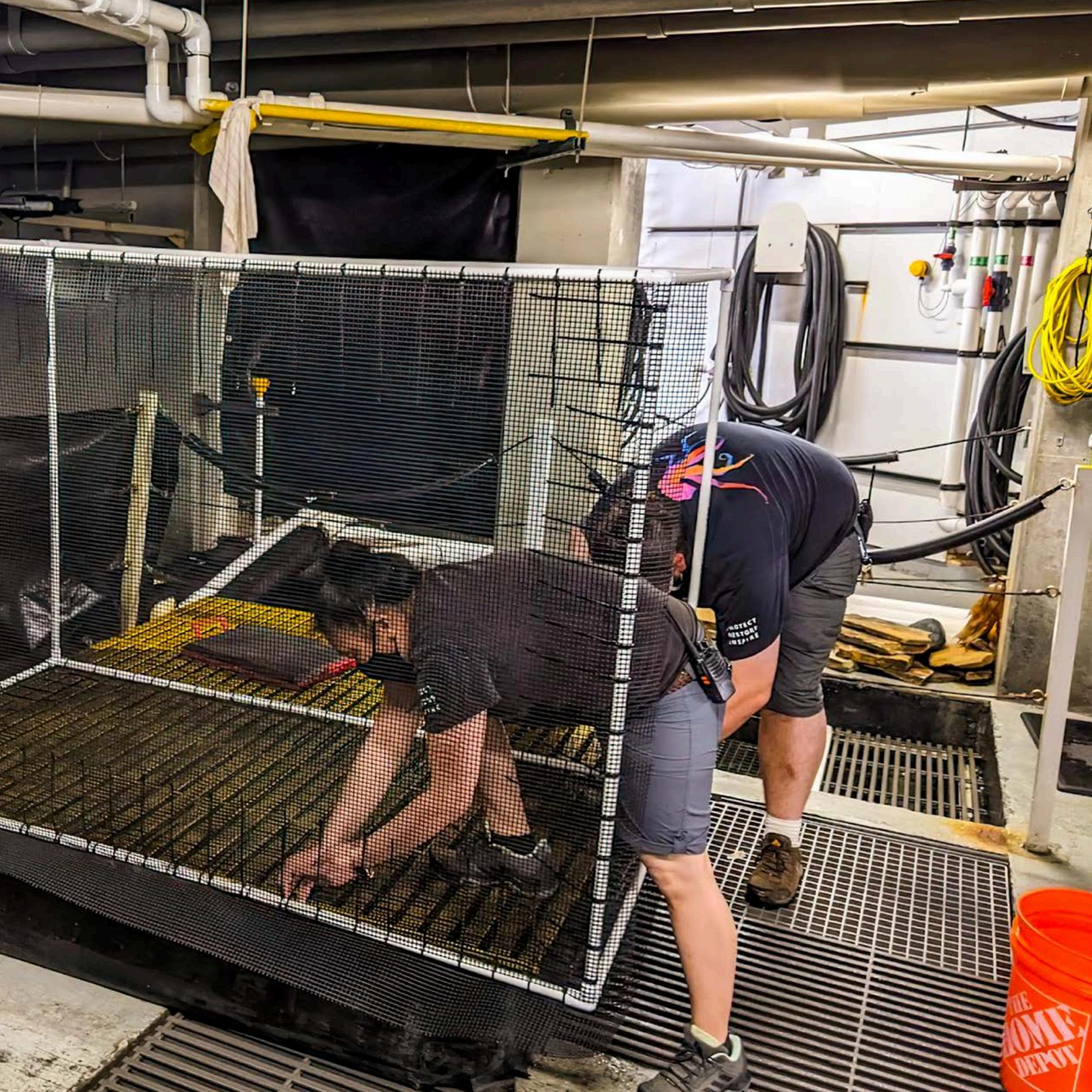


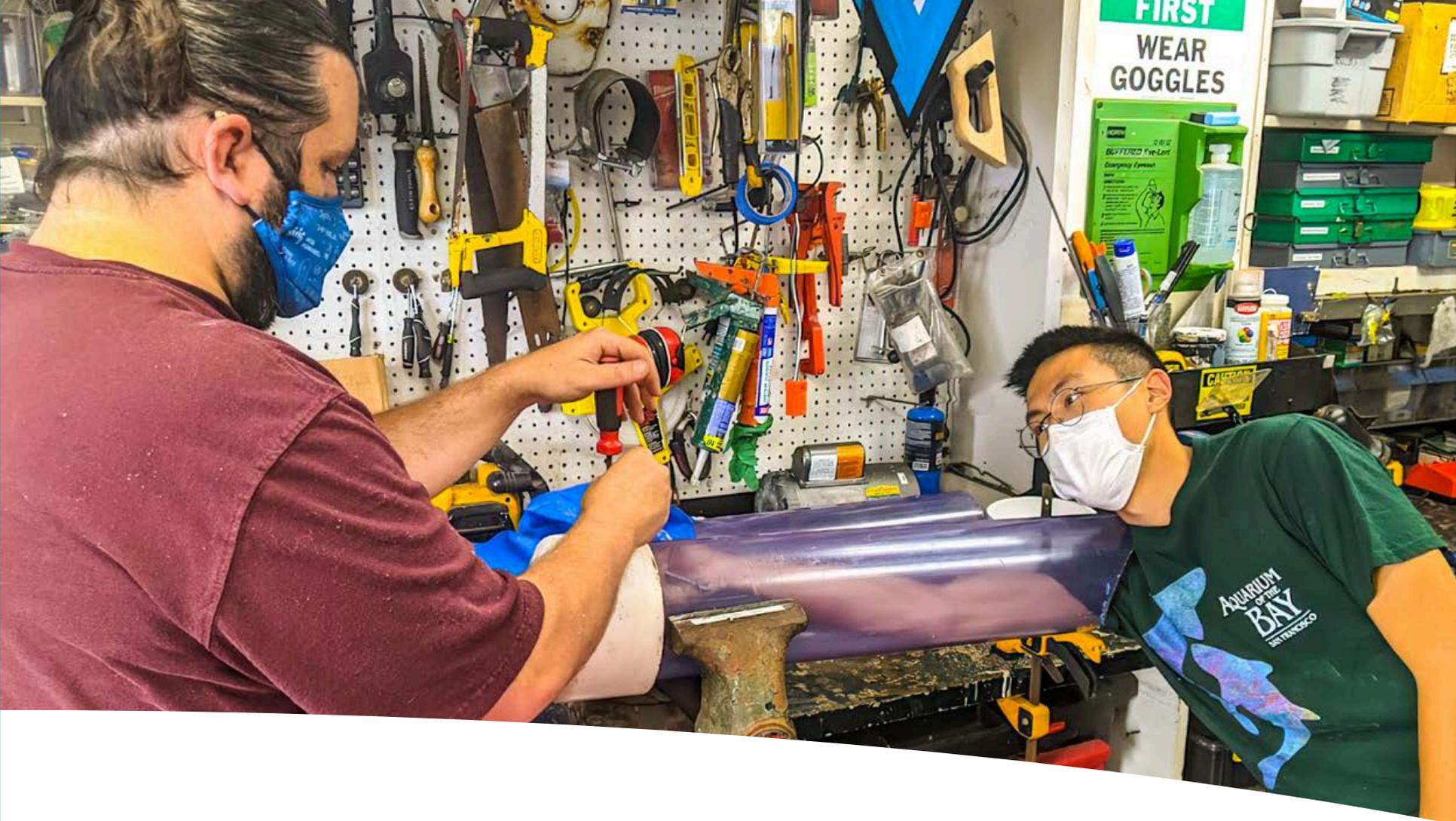
1. A strikingly beautiful Opal eye which can be found in the Nearshore Tunnel exhibit.
2. Biologist Isaac Koyama working in the California ground squirrel exhibit. Woolsey, our squirrel ambassador, needs a significant amount of daily enrichment. She has lots of energy and is very curious, enjoying digging an extensive tunnel system each day as well as searching for hidden treats.
3. A juvenile Pacific chorus frog, one of 15 frogs that are currently being raised behind-the-scenes until they are big enough to go on exhibit. The frog in this photo is about the size of a nickel, it will take 9-12 months for it to grow large enough to safely go on display in the Bay Lab.





The bright tentacles of the Orange sea cucumber are on full display. This is one of the 25 new species brought into our collection to celebrate the 25 year anniversary of the Aquarium. This animal can be viewed in our Bottom of the Bay exhibit, located in the first exhibit gallery.





As our Aquarium resumed operations this past spring, the Animal Care team provided additional assistance to the organization as a whole, from helping Facilities with various equipment repairs and building maintenance, to interpreting and engaging with visitors on the floor, and more. The Animal Care team also provided critical assistance to other teams while maintaining focus on our primary mission of care for the animals.

Lastly, as the year progressed, the Animal Care team resumed collecting operations using the R/V Mike Reigle to gather new animals for the collection, safely and successfully release others, as well as leverage opportunities to continue

research in the field. Those opportunities enabled us to successfully tag and take samples on 39 broadnose sevengill sharks while in the field. It is believed that San Francisco Bay is the only known nursery for broadnose sevengill sharks along the West Coast, but little is known about the status of this species. To change this, Animal Care continues to find opportunities to help conserve and further understanding of this iconic species in the bay.



Associate Director of Animal Care Kevin McEligot (left) working with Biologist John Lui (right) to repair one of our two dive vacuum heads. These custom-made pieces of equipment are vital to cleaning the main exhibits.



Biologist Noel Fong and Associate Director Kevin McEligot, preparing a large temporary enclosure to place over dens created for our wolf eels in the Nearshore Tunnel exhibit. This enclosure allowed the newly acclimated wolf eels to have some time to explore their surroundings and claiming some territory without having to be bothered by their tankmates.



Highlights

- 1,460 dives were logged in the Aquarium in 2021. 541 from the Animal Care team, and 919 from our volunteers.
- It takes over 46,000 pounds of food - about 890 pounds a week - to keep the collection thriving. Biologists thaw, chop, blend, and supplement the food before feeding it to the animals. That's a lot of lifting!
- 10 wolf eels that were born at Aquarium of the Bay in 2018 graduated to the Near Shore Tunnel, where enterprising and patient guests can find them amongst the rockwork and dens.
- The North American River Otters and cape porcupine were vaccinated against COVID-19 as part of a COVID vaccine study with Zoetis.
- Over 200 captive-bred pacific spiny lumpsuckers were transferred to 10 institutions around the country, providing these institutions with the ability to display this unique species without having to affect the wild populations. Our Aquarium is one of only a handful of institutions with successful pacific spiny lumpsuckers breeding populations.
- 7 California bat rays were born in the Sharks of Alcatraz exhibit in the summer of 2021.



3.

1. The Animal Care team working together to assist feed a Wolf eel. Providing individualized care to every animal in our collection takes considerable effort from the entire team.
2. Five of the seven California bat rays that were born at the Aquarium in 2021.
3. Biologist Noel Fong, the lead biologist in caring for our river otters, steps away from her furry friends to assist with Leopard shark physicals. This Leopard shark is recovering from sedation and will soon swim off on its own.



▲ R/V Mike Reigle docked next to Aquarium of the Bay

▶ Biologists Noel Fong and Meghan Holst monitoring two newly collected tope sharks while heading back to the Aquarium.



1. The Animal Care team was able to resume boat operations in 2021. Mike McGill, Manager of Collectioning and the R/V Mike Reigle, observes the boat being hauled out for annual inspection and maintenance.



2. Associate Director of Animal Care Kevin McEligot (back) with Biologists Meghan Holst and John Liu heading out to a collecting location on the Bay.

3. A beautiful day for collecting on the Bay.

3.







Newly arrived school of anchovies on display at the Nearshore Tunnel exhibit.



From the right to the left - Jill Berryman, Andrew Wolf, Madeline Marens, Meghan Holst, and Tyler Jung using all of their strength to move a large tote of live anchovies to the Nearshore Tunnel exhibit. Twice a year we acquire several thousand anchovies from a local fisherman, it takes significant coordination, time and strength by the Animal Care team to bring these animals into our collection but they are always one of the highlights of the exhibit.



◀
Biologist Meghan Holst (bottom) taking a blood sample from a newly collected broadnose sevengill shark before it is acclimated into the Sharks of Alcatraz exhibit. This animal continues to thrive and inspire the guests.

▼
A Red octopus investigating some of its environmental enrichment on exhibit.





AQUARIUM OF THE BAY



GUEST SERVICES & RETAIL

On March 4, 2021, we reopened the doors for the 2nd time during the pandemic at 25% capacity. With guests 2 years old and up requiring masks or facial covers, the Aquarium implemented a one-way directional path for guests from entrance to exit and utilized the external northern stairs to aid with social distancing and air flow in the tunnels. With this improvement, we were able to reopen at 25% capacity. Within 2 months, San Francisco increased capacity to businesses like Aquarium of the Bay to 50% and was at 100% capacity by mid-June.



Due to both our budgetary needs and initially not knowing how the public would react to the reopening of a mostly indoor attraction, Guest Services adjusted the hours of operation from 10 hours down to 7. For our first year, the front facing staff of Guest Services would only work a one-shift schedule. With this, we were able to bring back 6

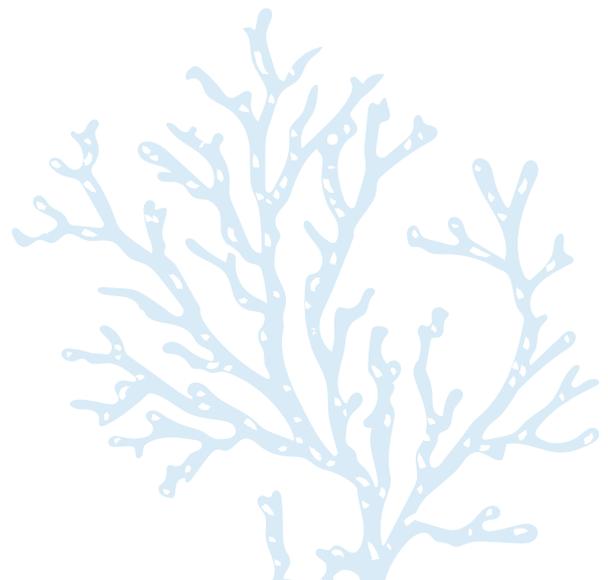
former staff members, some of whom were helping from other departments such as Education and Finance. Jaz Cariola, Director of Guest Services, was on the floor with the front facing staff as well until they could get a better understanding of visitors and recruit more staff. Due to the lack of staffing and the adjustment to travel returning to California, the Guest Services team decided early on not to operate the ticket sales booth at first. It was also decided we would not renew the lease of the PIER 39 ticket booth.

The Guest Services team had fluctuated with staffing levels since reopening, but was able to reach adequate capacity to meet the needs of the busy Summer season. With guest attendance showing a steady increase during the 3-week spread of Spring Break, we reached our goal to get the Plaza Booth location opened by Memorial Day.

Along with promotions, we were able to provide the team with wage increases to stay competitive, not only in the area,



1. Zenaida Nutterfield working at the Aquarium front desk
2. Pacific brown sea nettle
3. Visitors arriving at the Aquarium



r the Bay

Bahia 发现湾

FOLLOW US!
FACEBOOK

UNDERWATER
PUMPKIN
CARVING
WATCH OUR
DIVERS CARVE
PUMPKINS
UNDER WATER!

Security
5599

HYDRA PEARL
HAND
ANTIZIZER

Retail Associate Zosia Scislowski (Left) and Operation Supervisor Jasmine Hain help visitors at the Aquarium front desk



AQUARIUM OF THE BAY



1.



2.

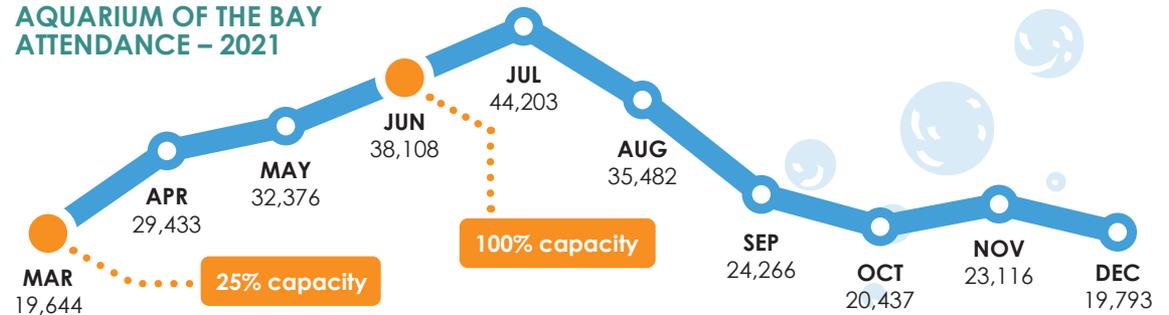


3.

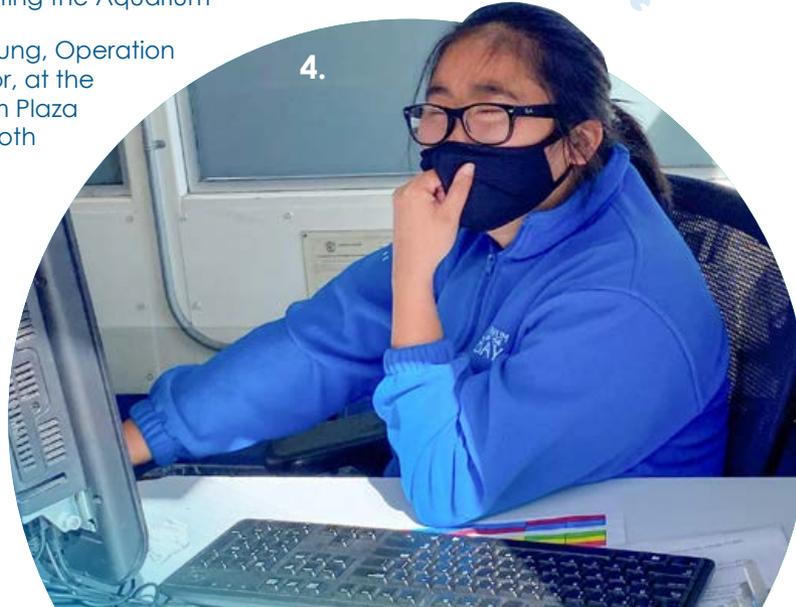
but in the return of employment post-COVID. It is still a struggle as we enter the holiday season, but the team Jaz put together is strong. For our second reopening, attendance flowed well from

the moment we opened our doors. As kids returned to the classrooms, we saw the usual decline in attendance after Labor Day but weekends remain strong.

AQUARIUM OF THE BAY ATTENDANCE – 2021



1. Ollie the otter greets a sailor during Fleet Week
2. Military vessel docked near PIER 39 during Fleet Week
3. A line of customers eagerly await visiting the Aquarium
4. Jodie Young, Operation Supervisor, at the Aquarium Plaza Ticket Booth



4.



Visitors line-up to enter Aquarium of the Bay, PIER 39



1.

BLUE ANGELS VISIT AQUARIUM OF THE BAY DURING FLEET WEEK

During Fleet Week in October, 38 of the 64 Blue Angels' team paid a visit to the Aquarium of the Bay after their air show over the water for the whole city to enjoy. Phillip Keeling, Director of Institutional Advancement, was able to contact their liaison and gave them an exclusive tour of our building. They were able to see behind-the-scenes, feed the fish, and have a Q&A session with a marine biologist. They looked as excited to be there as we were to meet them!



2.





3.



4.



5.

1. Carissa Gavin, Education Specialist, presenting to Blue Angels.
2. Blue Angels exploring the shark tunnels at Aquarium of the Bay.
3. Phillip Keeling, Director of Institutional Advancement, and Kevin McEligot, Associate Director of Animal Care, take a group photo with the Blue Angels outside the Aquarium.
4. Blue Angels in aerobatic formation over PIER 39.
5. The Giant Sea Bass gets a thumbs up from the Blue Angels.

ONLINE AND RETAIL MERCHANDISE FLIES OFF
SHELVES AS SALES HITS RECORD HIGH



Anson Ng arranges a display in the Aquarium of the Bay Gift Shop

ONLINE ECOSTORE SEES GREATER DEMAND



Face Mask – Tentacles



BUNDLE

Bundle | Shirt, Magnet, Tumbler, Mug



BUNDLE

Bundle | T-Shirt and Bottle Opener/Coaster



BUNDLE

Bundle | Tumbler, Magnet Postcard, Sea Lion Shirt



Aquarum H2GO Silo Tumbler



Soundtrack from Aquarium of the Bay



Aquarium of the Bay – Etched Shark Mug



Museum Futures: Gen Alpha (Hardcover)







George Jacob delivers a speech after accepting the 2021 Sustainability Advocate Award for Aquarium of the Bay



George Jacob stands with CalTravel CEO Barb Newton, Visit Huntington Beach Chair Kelly Miller, and other CEOs at the CalTravel Association 38th Annual Summit.



George Jacob holding the Sustainability Advocate Award with beautiful Huntington Beach in the background.



CONCEPT
ARCHITECTURE



GLOBAL FUTURE DESIGN AWARDS

WINNER
2021

470 entries | 30 countries

BayEcotarium: Climate & Ocean Living Museum

Global Future Design Awards is one of the world's most prestigious awards for architecture, interior, and product design. It recognizes outstanding ideas that redefine Architecture through engaging novel technologies, materials, programs, aesthetics, and spatial design that enables flexibility and digital revolution as it examines the organic symbiosis between nature and architecture.



XTU

SAN FRANCISCO



2021 GFD WINNERS



PARK & RIDE PARKING FACILITY NANTES

Transportation Architecture Built



MIT SITE 4

Mixed-Use Architecture Built



RAS BUFONTAS FREE ZONE

Sustainable Architecture Built



ECUMENICAL SPACE IN VARGINHA

Cultural Architecture Concept



POLY 335 FINANCIAL CENTER

Future Architecture Concept



ZHENRO & MIDEA HEZHUMEIJI-ANG SALES CENTER

Commercial Interior Built



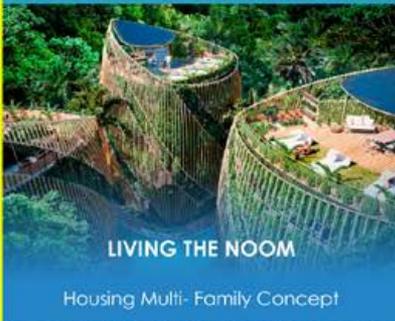
DALIAN GEMDALE CITY BROWN STONE CASTLE

Future Architecture Built



STRAIT CULTURE AND ART CENTER

Cultural Architecture Built



LIVING THE NOOM

Housing Multi-Family Concept



SONGKHLA WOOD HERITAGE HOTEL

Hospitality Architecture Concept



ORIENTAL MOVIE METROPOLIS GRAND THEATER

Cultural Architecture Built



KERING MEXICO

Office Interior Design Built



GAN DIAN CENTER

Skyscraper Architecture Concept



CONCRETE COPPER HOME

Residential Architecture Built



POINT DUME RESIDENCE

Residential Architecture Small Family Built



XIAMEN CHINA OLYMPIC YACHT CLUB

Hospitality Architecture Concept



CHENYUE URBAN GREENLAND PARK EXHIBITION HALL

Public Building Built



EXHIBITION HALL OF SHENYE HEALTH

Architecture Design Concept



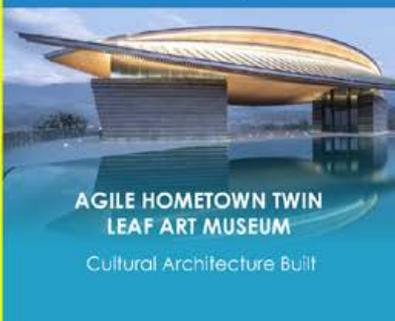
TURTLE BAY @ HUA HIN

Hospitality Architecture Built



COUNTRY GARDEN HUJING JIAYUAN

Landscape Architecture Built



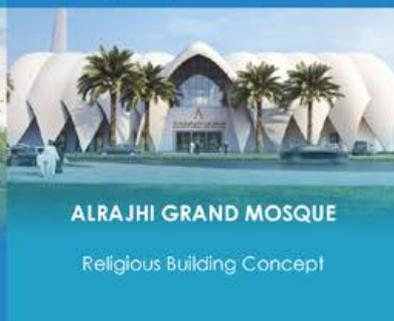
AGILE HOMETOWN TWIN LEAF ART MUSEUM

Cultural Architecture Built



THE "EGG" - GARDEN, A TRIBUTE TO FABERGÉ

Public Landscape Concept



ALRAJHI GRAND MOSQUE

Religious Building Concept



QINTIAN MUSEUM

Cultural Architecture Concept



AQUARIUM OF THE BAY



EVENTS

Blue Marble Benefit 2021

The aquarium held the first in person post-COVID event combining TBI awards and the Blue Marble Benefit that brought together environmental advocates, patrons, members, sponsors, and supporters. The benefit was presided over by California Lt. Governor Eleni Kounalakis, with the keynote address delivered by former Prime Minister of Greece, H.E. George Papandreou at Hayes Mansion in San Jose.



Michael Gallagher, the first General Manager of Aquarium of the Bay was honored in the presence of his family members and Visit California CEO, Caroline Beteta, for lifetime contribution to tourism and destinations across United States. Dr. Sylvia Earle received the first Blue Marble award conferred by Lt. Gov. of California Eleni Kounalakis for her lifetime dedication to ocean exploration, hope spots, and being a global voice for sustainable oceans.



1. Dean Morehou, Board of Directors, addressing award winners and guests at The Bay Institute Annual Awards
2. Guests engaged in presentation during at The Bay Institute Annual Awards
3. Brian Baird attending the The Bay Institute awards

The Bay Institute 28th Annual Awards

The 28th TBI awards was a hybrid event held to coincide with World Ocean Day and the Blue Marble Benefit on June 8, 2021.

- **Terry Young**
Bay Hero Award
- **Martha Davis**
Carla Bard Award
- **Chris Beaver**
Harold Gillian Award
- **Bill Kier**
Lifetime Achievement Award



BE the Movement™



▲ TBI award winners standing with H.E. George Papandreou, former Prime Minister of Greece (center). Left, Terry Young and Chris Beaver, on right, Martha Davis and Bill Kier.

▶ Gary Bobker, Director Rivers & Delta Program, introducing the 28th TBI annual awards winners

BLUE MARBLE *Benefit*™



1. Dan Ashley, News Anchor at ABC7 addressing the audience at the Blue Marble Benefit as master of ceremonies.
2. Visit California CEO Caroline Beteta, US Travel CEO Roger Dow, and Patrick Gallagher accompany Michael Gallagher as he accepts the Blue Marble Award for his passion and service to the Aquarium as its first General Manager.
3. Caroline Beteta, former Prime Minister of Greece George Papandreou, California Lt. Governor Eleni Kounalakis and George Jacob smile for a photo.
4. George Papandreou delivers Opening Remarks.





Guests walk down the Blue Carpet reception at the 2021 Blue Marble Benefit.



1.



2.



3.

1. Dean Morehous, Board of Directors, BayEcotarium, addresses guests from across the United States and as far as the Republic of the Congo at the Blue Marble Benefit
2. San Francisco artist Malik Seneferu paints and dedicates a sea lion to environmental justice during the event
3. Freddy Clarke and the Wobbly World electrifies the audience with world music



4. Guests on the north lawn of the Hayes Mansion at the Blue Marble Benefit
5. Sylvia Earle poses with her 2021 Blue Marble Award
6. Live auction bid from #46. Going, going, gone!



AQUARIUM OF THE BAY



TOURISM

After a tough 2020, 2021 was an exciting year for us. Not only were our numbers up from last year, but we had an even better summer than we did in 2019. We continued to keep strong relations with our OTAs. At the International Pow Wow (IPW), we made great new connections and grew our contracts with tour operators who also gave us a great head start on the next 40 contracts being sent out. Next year, we will be raising the price of all tickets across the board by 50 cents.



TRADE SHOWS

IPW 2021

- Las Vegas Convention Center

Travel and Adventure

- Advertised EcoXpeditions and private event
- Connected with a new EcoXpedition partner for Baja, California

All Things Meetings

- Started a great relationship with Delta and Marriott Hotels
- Promoted our private event spaces and EcoXpeditions



1. Director of EcoXpeditions Angelina Preza, left, and Manager of Events and Tourism Hannah Woodall at the aquarium's trade show booth during the Travel and Adventure show
2. EcoXpeditions booth at the Travel and Adventure show with Angelina Preza
3. Angelina Preza at the Aquarium of the Bay booth during the All Things Meetings show

▶ Paul Nakamoto, Vice President of Guess Experiences, taking a BIG BUS Tour during the IPW 2021, Las Vegas

▶ Aquarium of the Bay booth at IPW 2021

▶ IPW 2021 was held as the Las Vegas Convention Center





Sylvia Earle Academic (SEA) Scholarship

With the release of her highly anticipated new book, *Ocean: A Global Odyssey*, Sylvia Earle is touring the country for promotions and book signings. Aquarium of the Bay works closely with her, and hosted one of these events, **An Evening with Sylvia Earle**, on Thursday, November 18th, 2021 at The Bay Model in Sausalito. She spoke with the crowd, greeted her fans, and signed books while promoting the protection of our ocean and its beauty.

During the event, we were incredibly excited to announce that in recognition of Dr. Sylvia Earle's Lifetime Contributions dedicated to bringing Awareness and Action, Aquarium of the Bay has instituted the **Sylvia Earle Academic (SEA) Scholarship**.

Aquarium of the Bay invites applications from currently enrolled undergraduate and graduate students aspiring to specialize in environmental studies, ocean conservation, marine biology, sustainability and or policy work.



1.

The \$8,000 scholarship winner will be named on World Ocean Day, (June 8th) each year and will continue over a 12-month period. We ask our applicants to include a 1,000-word essay highlighting their on-going work and aspirational impact they strive for, a current resume, enrollment details of the University program, and a letter of recommendation from a current faculty member and send it to us no later than March 31, 2022.

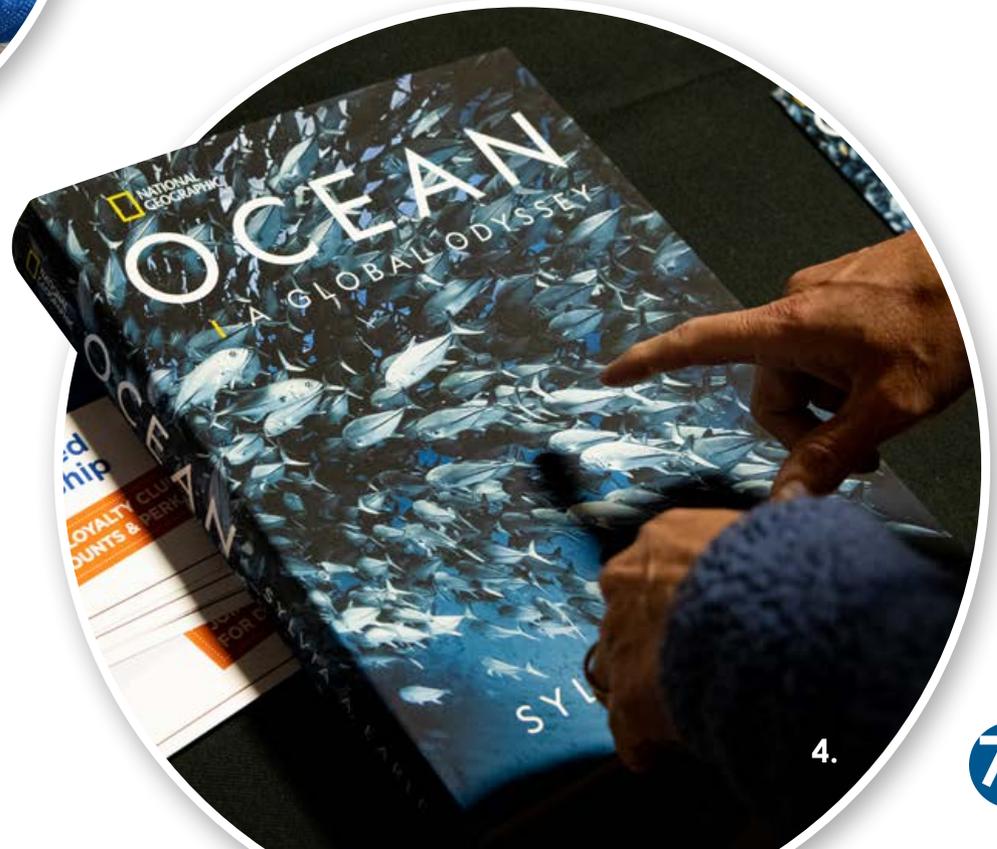


3.



2.

1. Dr. Sylvia Earle and George Jacob, President and CEO, BayEcoarium, announcing Sylvia Earle Academic (SEA) Scholarship
2. Dr. Sylvia Earle signing the National Geographic book titled OCEAN: A Global Odyssey
3. Over 200 guests gather at the Bay Model in Sausalito to hear Dr. Sylvia Earle deliver a moving appeal to cherish and celebrate sustainable oceans.
4. Cover of her promoted new publication, OCEAN: A Global Odyssey



4.

UNLOCKING THE LOCKDOWN - VIRTUALLY!



THE BAY INSTITUTE
40 YEARS

28TH TBI AWARDS






TERRY YOUNG
Bay Hero Award

MARTHA DAVIS
Carla Bard Award

CHRIS BEAVER
Harold Gilliam Award

BILL KIER
Lifetime Achievement Award

AWARD WINNERS

HYBRID EVENT JUNE 8TH, 4:00 PM

ON-SITE & ONLINE

HAYES MANSION
200 Edenvale Ave, San Jose, CA 95136

RSVP REQUIRED
Contact: Gary@BayEcotarium.org









www.bayecotarium.org

CLIMATE CHANGE CONVERSATIONS

SAN FRANCISCO



OCTOBER 19, 6:30 PM @ THE BATTERY
717 Battery Street, San Francisco | TheBatterySF.com

PANELISTS



George Jacob FRCGS
President & CEO, BayEcotarium / Aquarium of the Bay
Chief Advisor to UN Environment on Climate Museums (Caribbean)
Board of Directors, ICOM US | Board of Directors, Cal Travel



Tanya McVeigh Peterson, Esq.
President & Executive Director
San Francisco Zoo



Scott D. Sampson, PhD
Executive Director, William R. & Gretchen B. Kimball Chair, California Academy of Sciences



Moderator: Michael Sutton
Executive Director, Goldman Environmental Foundation

ONLINE WEBINAR

CHICAGO BOOTH ALUMNI CLUB OF SAN FRANCISCO

MUSEUM FUTURE'S | CORONA CONUNDRUM



“
Corona has put the
future of museums at
crossroads- can socially
distanced technology
bridge the gap between
content, curation,
conversation, critical
thinking and creativity?
”



GEORGE JACOB FRCGS
President & CEO, BayEcotarium

MAY 27, 2021
5:30 PM - 6:30 PM (PDT)

Founding Director of 4 Award winning museums and 108 stellar museum projects worldwide, George Jacob will speak about his new book, "Museum Futures: Corona Conundrum."



FREE REGISTRATION: BAYECOTARIUM.ORG/WEBINAR

BLACK HISTORY MONTH



SANKOFA Days
@ THE BAY

VIRTUAL EVENT • FEBRUARY 19



ASSOCIATION
OF ZOOS &
AQUARIUMS &



1.



2.

1. Staff enjoying Thanksgiving breakfast celebration
2. Paul Nakamoto expresses thanks to the staff for their hard work and dedication
3. Staff enjoy Thanksgiving breakfast buffet
4. Vicki De Witt, Executive Assistant and Chris Low, Facilities Director, discuss the run of show and all staff gift cards ahead of the Thanksgiving breakfast celebration

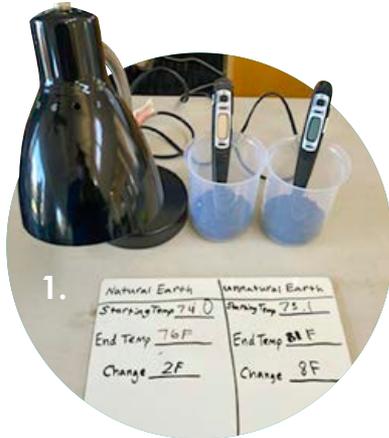


3.



4.





EDUCATION

When San Francisco moved into the most restrictive COVID tier the Sunday after Thanksgiving in 2020, the Aquarium was once again forced to close its doors. Since then, only one member of Education returned, but they transitioned to a different focus. It was not until May that there were two members as part of the Education team. While Education was not actively working with our guests on the Aquarium floor until August 2021, behind the scenes, the team worked on various projects to keep the learning process alive.

Trout in the Classroom



While the Aquarium remained closed, our Trout in the Classroom program was in session. In non-COVID years, new teachers take workshops hosted by Department of Fish and Game, prepare their Aquarium of the Bay sponsored tanks, and hatch trout fishery eggs while their students learn and study the process. For 2021, only six teachers opted to hatch eggs. The Aquarium picked up the eggs in February and delivered them to the teachers to raise. The teachers raised the eggs at home to the learning benefit of their students. A month later, the tiny trout were released into Lake Merced in the Southwest corner of San Francisco in accordance with a mandate from the Department of Fish and Game.



Grants

The aquarium successfully secured multiple grants throughout the year that supported our educational programs and outreach extension services. The Education team was successful in executing the third grant from the San Francisco Public Utilities Commission, securing another grant from the San Francisco Department of Children, Youth, and their Families for Summer camp, as well as a grant from the Bothin Foundation to teach 3D printing skills to underprivileged students for the benefit of low vision and non-sighted individuals.



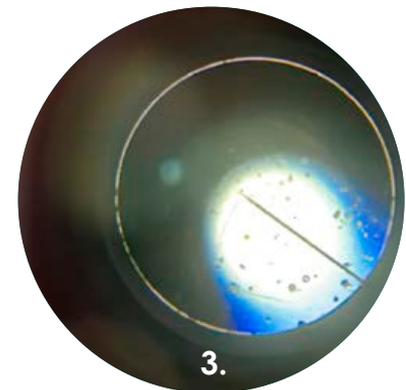
1. Climate Change experiment
2. Campers creating craft otters
3. Campers locate and count the sea lion population on PIER 39



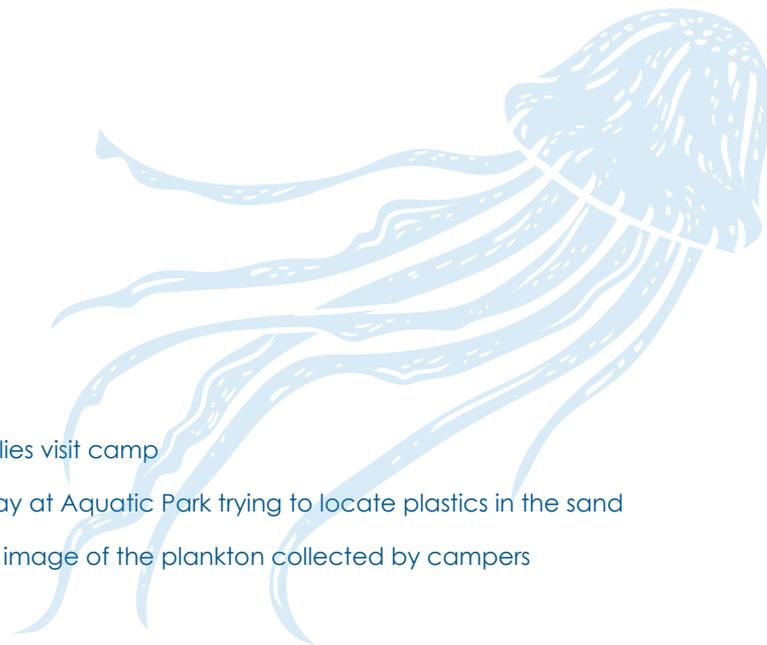
Summer Together

A major highlight for the Education team occurred in May to early August of this year. After spending the 2020-2021 school year online, the City of San Francisco wanted to increase the social and educational opportunities for its children by offering expanded free summer camp. By May, the San Francisco Department of Children, Youth, and their Families (CYF), reached out and asked if we would be able to host programs for these children. For the first time in over 15 years, Aquarium of the Bay hosted an all-day Summer Camp as part of the Summer Together program.

We hosted back-to-back-to-back sessions of summer camp starting June 7th and ending August 6th. The camp consisted of thematic weeks with topics like marine debris and plastics, watersheds, San Francisco Bay history, and climate change. Most days at camp started with a trip to the Aquarium for a mini-lesson and continued at the Sea Lion Center for the rest of the day. The days were broken up with outdoor games on the grass on the east side of the Aquarium or walking to local destinations for a lesson. The kids participated in plankton tows off the pier to see the samples under microscopes, walked to Aquatic Park to comb the sand for plastics, cleaned parks, observed and monitored the sea lions, and had a free afternoon enjoying Pier 39. The Education team would like to acknowledge Animal Care for all their patience and support in making this summer camp possible. They are more appreciated than they know.



1. Moon Jellies visit camp
2. Beach Day at Aquatic Park trying to locate plastics in the sand
3. Enlarged image of the plankton collected by campers





AQUARIUM OF THE BAY



High School Internship Program

We had an amazing partnership with the San Francisco Public Utilities Commission (SFPUC) for this project. This year, we completed a three-year internship grant that brought job training skills and flooding knowledge to all the participants. Like last year, the internship was virtual. Over the course of six weeks, seven high school students received almost 40 hours of paid instruction, which was over 20 hours more than the minimum grant requirement. SFPUC supplied the curriculum to learn about flooding and water management for the city of San Francisco, while Aquarium staff provided the delivery and job skills. The students learned not only where the water they see on the ground goes, but also how San Francisco is moving toward creating more green spaces to prevent water from going down the drain. The students received instruction about climate change and activism, news article bias, citing scientific sources, and how compelling social media stories and videos can bolster messaging efficacy. They were also taught critical interview skills and how to craft a strong resume to give them a strong start to their career down the line.



Virtual Aquarium Tours

In conjunction with the Sales team, Education continues to lead virtual online tours ranging from Pre-schools and families to corporate fun days. These tours have been ongoing since the reopening of the Aquarium.

Onsite Programs

One of the big casualties of the pandemic has been the on-site education programs. There were no Aquarium teacher-led programs or self-guided tours for most of 2021. Beginning in September, Education began preparing to roll out a very limited menu of on-site program offerings. Self-guided tours would be offered Monday through Thursday, while teacher-led programs would only be offered on Tuesdays and Thursdays. Currently, there are 25 self-guided tours with 631 students and 115 chaperones, for a total of 746 participants on the 2021 calendar. Thankfully, more Aquarium of the Bay teacher-led programs are scheduled for next year.



1. Camper discovers his love of microscopes
2. Camper has an up-close and personal experience with the moon jellies
3. Campers connect with the Blue Tongue Stink on the final day of camp



▶ Education Specialist,
Alice Pederkoff,
streaming live during
Virtual Aquarium Visits





2.

RYER KADYK MEETS RYER THE OTTER

Nine-year-old Ryer Kadyk came all the way from Spokane, Washington to do two things: hang out with his namesake river otter friend and raise money for Aquarium of the Bay. By all accounts, both efforts were extremely successful.

Ryer helped raise more than \$75,000 at a charity auction hosted by BayEcoTarium. He gave a speech to 175 people, including the former prime minister of Greece, about his special friendship with the 8-year-old otter and even helped the auctioneer drum up enthusiasm during the event.

The first time the two Ryers met was just before spring break, when the Aquarium reopened after our 49-week closure. Ryer the human had been waiting to meet his

furry friend in person since last Christmas, when his mom Carolyn first learned the pair share a name.

Since her son had never met anyone with the same name, she reached out to our staff and asked to buy a Ryer River Otter plush toy for him as a present. After opening his gift, Ryer was able to learn about the real otter from our website and soon decided to donate his Christmas money, cash from his piggy bank and a contribution from his older brother to the Aquarium. Together with a second round of fundraising that involved the rest of the family, Ryer was able to send his otter friend a total of \$750.

The family's unexpected donations were especially meaningful for us, since they arrived during the height of the pandemic while we dealt with daunting staffing and budgetary challenges. The connection Ryer has to his otter counterpart of the same name is inspirational



3.

and reminds all of us about the core relationship we have with wildlife as humans.

While Ryer and his mom were only able to spend a couple of days in San Francisco, our Aquarium has a special place in the boy's heart. He said: "I really like it because it's where my otter lives."



4.

1. Ryer Kadyk speaks at the 2021 Blue Marble Benefit
2. Ryer helping during the charity auction hosted by BayEcotarium at the Blue Marble Benefit
3. Ryer Kadyk meets Ryer the river otter
4. Dan Ashley, journalist, shakes hands with Ryer Kadyk



Aquarium of the Bay CEO, George Jacob, being interviewed by multiple television networks as the aquarium emerges successfully after a prolonged shutdown forced due to COVID-19.



MBS *Gazette*

San Francisco
Chronicle



SAN FRANCISCO
BUSINESS TIMES



inverclydenow

Dubai TV Xponential Talks anchor Tariq Qureishy interviews George Jacob, President and CEO of BayEcoTarium.





SHANGHAI ON THE BAY... A HOLIDAY TASTING EXPERIENCE

Hosted at Cold Drinks Bar, this quasi-speakeasy was illuminated by a most opulent atmosphere reminiscent of jazz clubs of Shanghai 1930's.

Guests enjoyed the launch of the holiday season while dining on sustainable seafood and gourmet bites in the company of environmentally conscious and conservation minded individuals.

They were delighted with our holiday tasting experience brought by celebrity chef George Chen, Founder, CEO, and Executive Chef, China Live San



Francisco. Chef George Chen has opened such stellar dining establishments as Shanghai 1930 and Betelnut, with China Live San Francisco being the latest of his undertakings, an incredible multi-concept food emporium and epicurean destination. He was joined by Floyd Nunn, Chef de Cuisine, Eight Tables by George Chen, formerly of Quince and Benu.



▲
Board of Directors Chair, Ben Bleiman, urges guests to support the aquarium and its mission towards Earth and environmental justice

▶
Nikita Germaine lifted holiday spirits with her vocal stylings, reminiscent of Jazz greats, Ella Fitzgerald, Billie Holiday, Dinah Washington, Sarah Vaughn and Nancy Wilson





AQUARIUM OF THE BAY



FACILITIES AND LIFE SUPPORT SYSTEMS (LSS)

2021 has been a productive year for the Facilities/LSS team despite significant challenges with staffing and the Aquarium being closed to the public for the first half of the year that forced the staff to work with reduced hours, three shifts a day. Challenges continued with retention and continuity given the uncertainty of full resumption of operations and maintenance. Despite the circumstances, we were able to maintain all critical Life Support systems and carry out multiple in-house repairs, maintenance of equipment, cleaning protocols and a complete upgrades to exhibits. We were able to increase staff salaries to make all staff non-exempt, which helped with both recruiting, training and retention of facilities staff, as well as the ability to cover a 24/7 schedule without overtime or burn-out.



Highlights

- Repair work on shower mixing valve in Dive locker
- Replacement of damaged and molded drywall with Kydex waterproof sheeting as an added moisture barrier
- Stori Box and IT upgraded photo concession operation and switched retail POS with Story Box POS in R1
- Prepped and resurfaced multiple exhibit walls for graphic installs including reception and retail desks
- Followed Health Department guidelines for re-opening and adjusted as needed to stay in compliance with changing standards.
- Worked on the Jamaican Master Plan Life Support Systems for a 2.2 million gallon tank for the proposed Oceanarium
- Received multiple proposals for fire alarm panel work. Engaged ADT to start, and work is currently in progress
- Addressed red tag Crane hoist issues, and the Crane hoist is back in operation.
- Returned all sea lion statues back to Aquarium from across San Francisco
- Collaborated with Aquarium team on Blue Marble Gala event
- Submitted Green Business re-Certification requirements.



1. Copper rockfish
2. Wolf eel exhibit
3. North American River Otter



▲ Shower mixing valve repair and wall finished

▶ Facilities working with Story Box and IT to upgrade photo concession operations





◀ Facilities working with Story Box and IT to swap POS in the Aquarium Gift Shop

▶ Lobby wall in process of being smoothed and prepped for Anniversary Wall installation

▲ AlphaGraphics installing anniversary wall in Aquarium lobby





1.

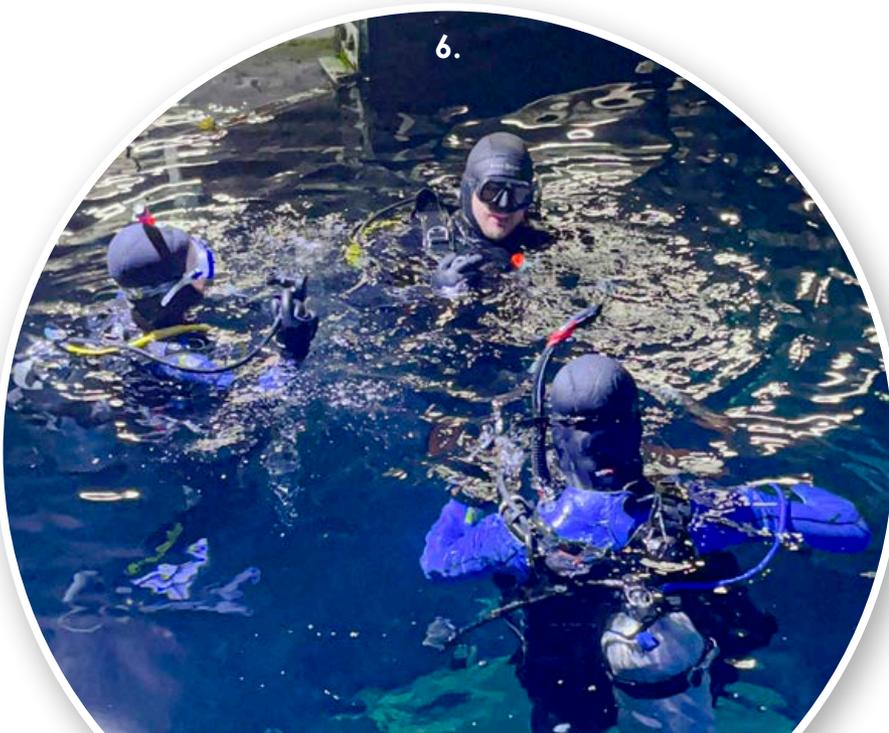
1. Dr. Latha Palaniappan of Stanford Medicine visiting the top of our tunnels before her dive
2. Dr. Palaniappan suiting up to dive in the tunnels
3. Chris Grace, our Dive Safety Officer, helping Dr. Palaniappan prepare her gear



2.



3.



4. Chris Grace prepping the scuba equipment before Avery's dive
5. Avery and Jon Fisher, avid divers and aquarium supporters, diving in the nearshore tunnel exhibit. Avery is the youngest diver we have had dive at the Aquarium.
6. Chris Grace, Jon Fisher and Avery Fisher reviewing their dive plan before descending into the tunnels. Along with helping to care for the animals, Avery was able to get her Fish Identification and Underwater Digital Photography Certification.



AQUARIUM OF THE BAY

INFORMATION TECHNOLOGY (IT)



Reopening and Replacing Equipment

The IT team was able to welcome our guests back into the Aquarium with the reopening message on the website, which has been a significant improvement to morale. We were also able to update our screen software for all the front advertising displays that pull select reviews and Instagram photos for increased social engagement. While touch points like any interactive display inside the Aquarium is still not available, the IT team have done their best to change these to be automatic or have temporarily disabled them. As the Aquarium reopened in March, we noticed an issue with the SQL server that was causing periodic interruptions. The issue was investigated and was found to be an issue that would eventually cause the server to fail. A replacement was sourced, the database was copied, and the server was replaced. Along similar lines, we learned that the payment processor (BCAM) was dropping the credit card processing method, so a new merchant gateway was implemented before reopening.



COVID-19 and continued struggles with timed ticketing:

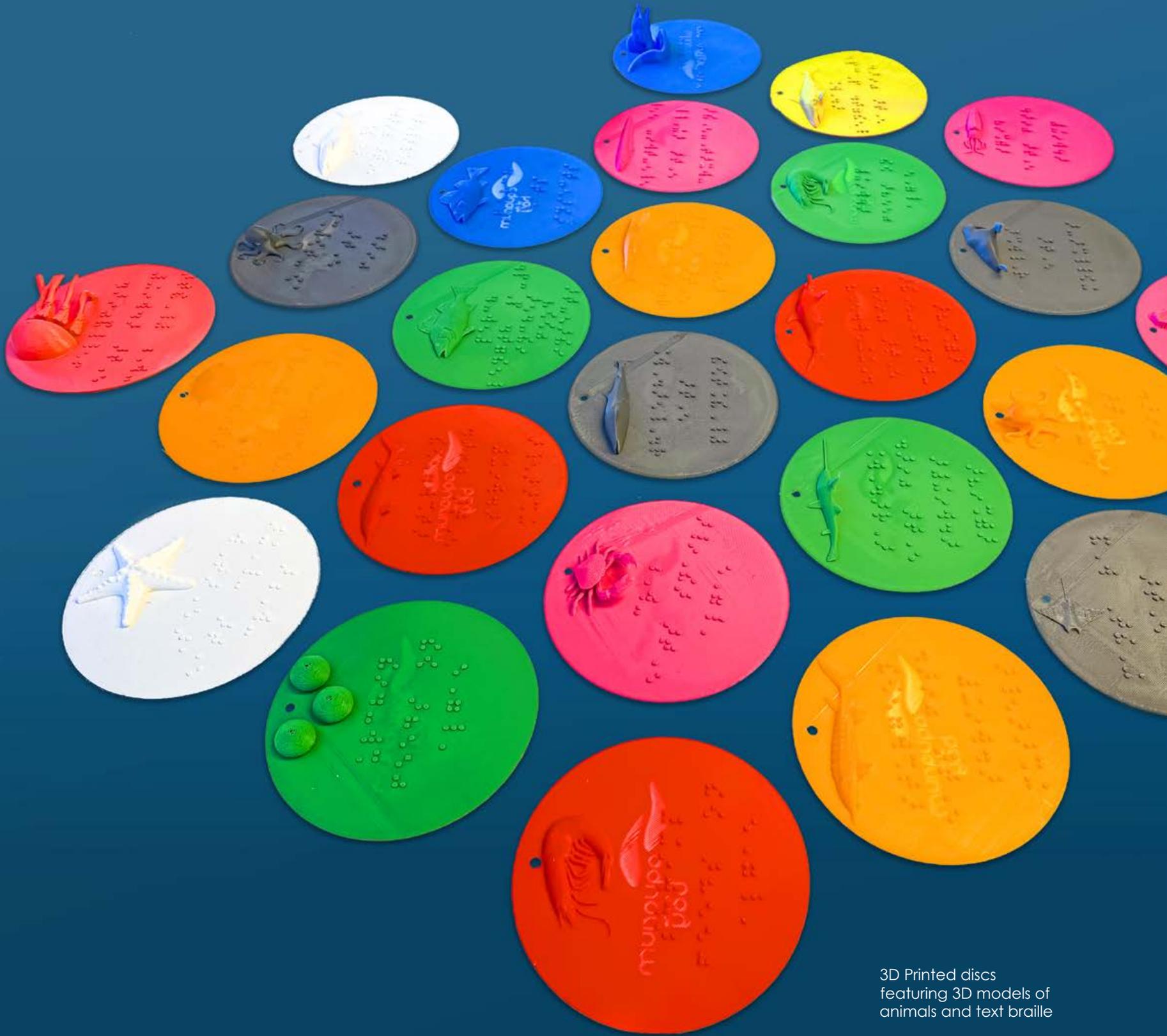
With COVID challenges continuing for almost two whole years now, we had to roll with large sector changes in the industry. Re-opening with shifting stages and vague guidelines led to us being cautious about expanding the open slots for timed ticketing as attendance progressed from 25% to 50% and upward capacity.

New Software incoming:

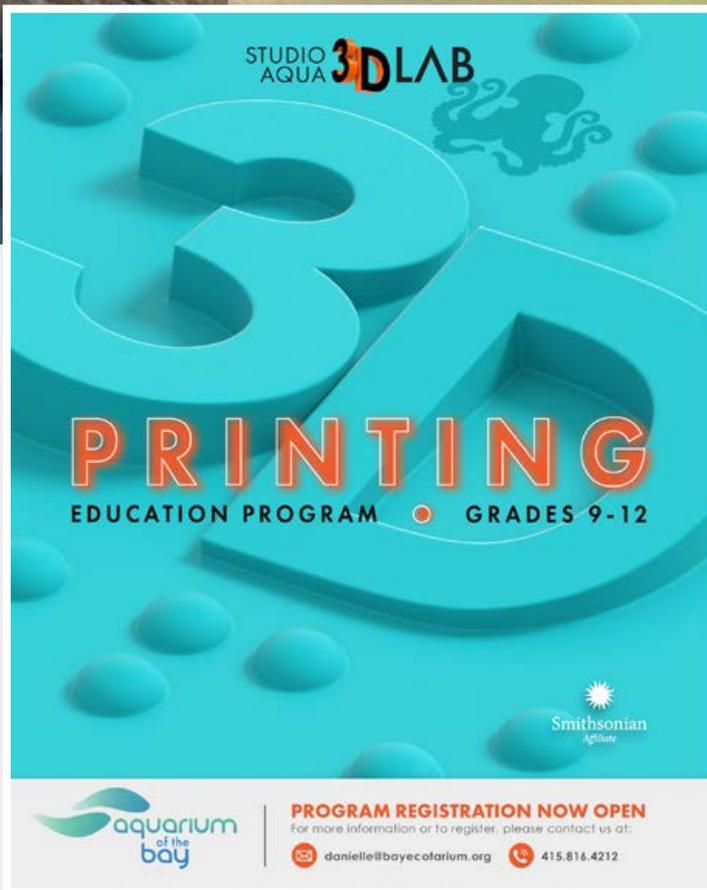
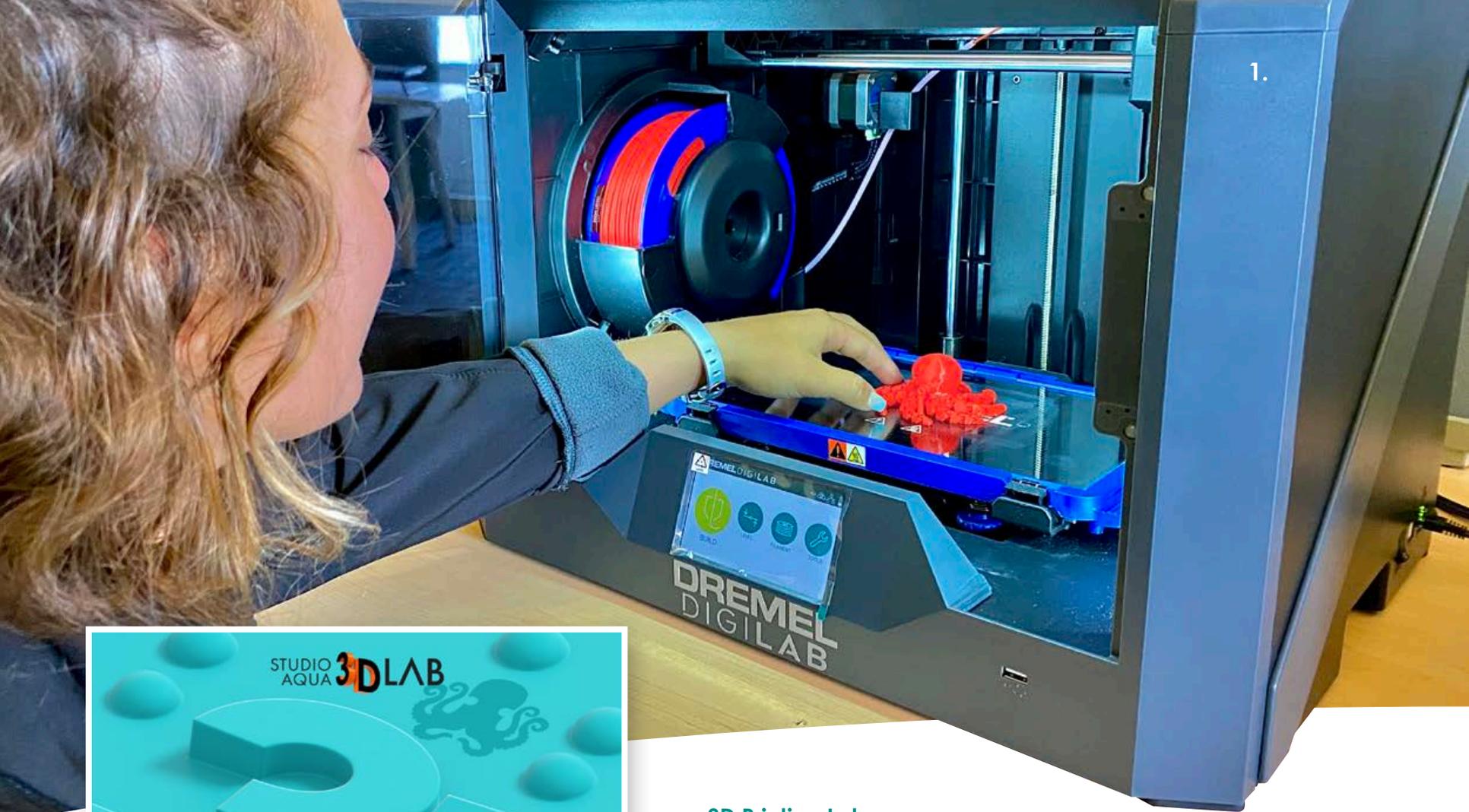
Thanks to a generous donation, we were able to start the process of moving Animal Care files and records from our Salesforce server to a proper database called Tracks. This Animal Care software is purpose-built for the tracking and recording of animal welfare and training. While the current solution was serviceable, this software can supply a lot more functionality while being easier to support than the custom setup. Similarly, the Development team is going to move to Salsa CRM (Customer Relationship Management) which the new Director of Development, Phillip Keeling, is familiar with. Going into the new year, we look forward to both systems being set up and configured.



1. Spiny Lump sucker exhibit
2. North American River Otter exhibit
3. George Jacob, President and CEO, reviewing 3D prints and equipment

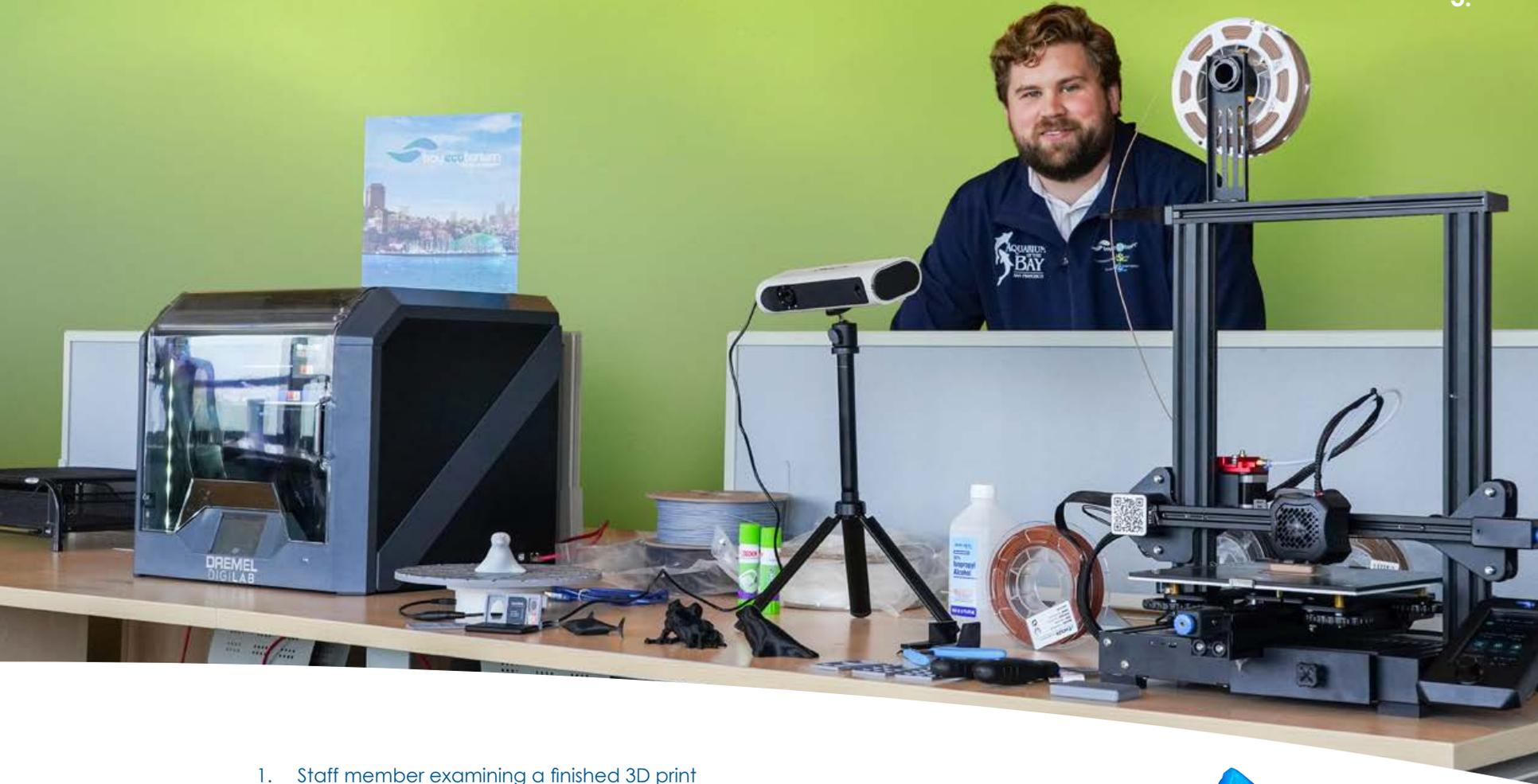


3D Printed discs
featuring 3D models of
animals and text braille

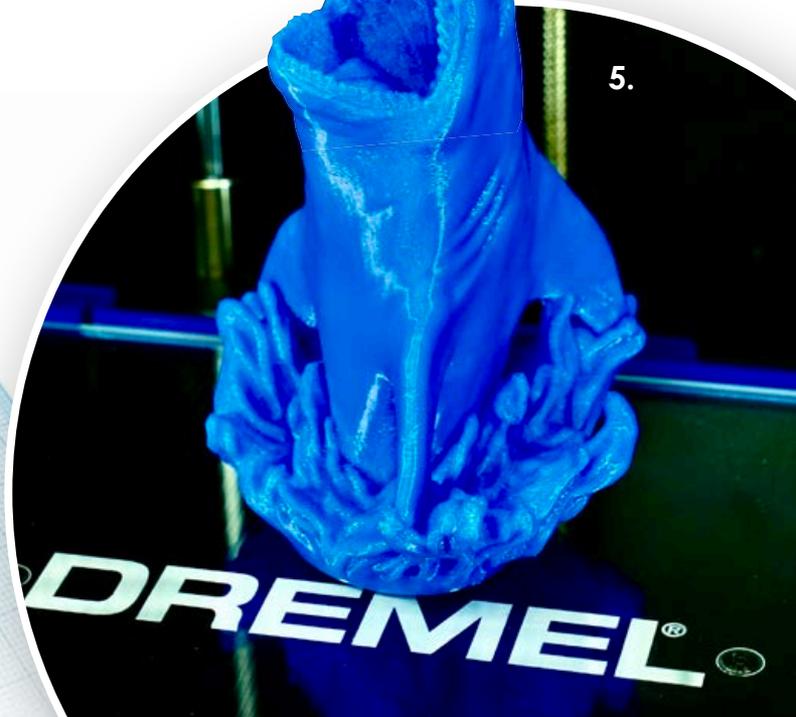
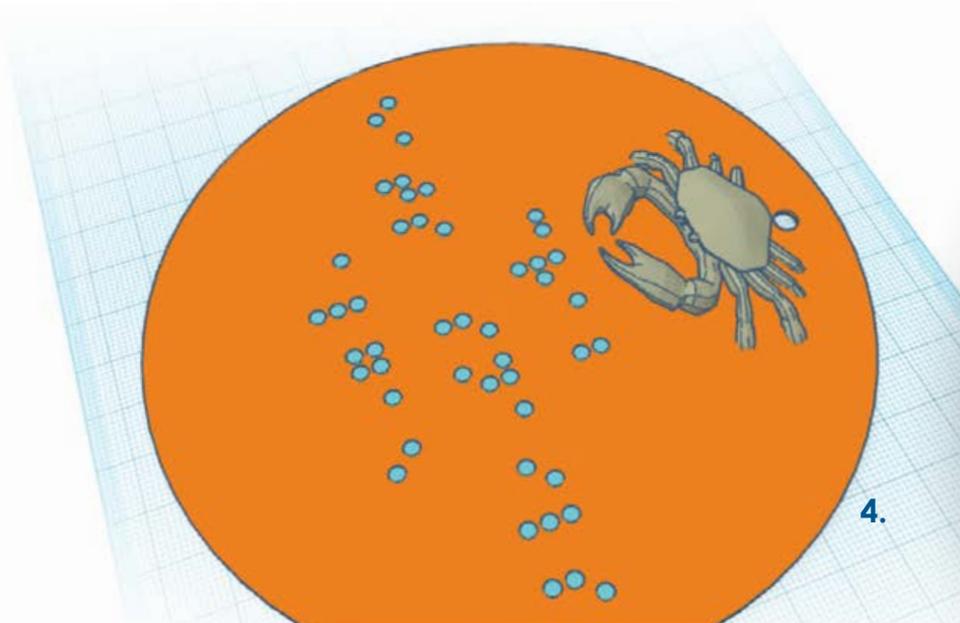


3D Printing Lab

With the Education team supplying the grant, Patrick Doran, Director of IT Services, was given the opportunity to set up a 3D printing lab in the 55 Francisco office. He had never used a 3D printer before, and it was quite an experience to learn. As part of this process, we oversaw creating the files for the Education team. We did this by buying models from a stock website, and then modifying them to fit on the example platter. Then, we added the Braille using a braille generator in our CAD program. After creating the first batch of models, we were able to bring them to the East Bay Center for the Blind to make sure that it was on the right track with legibility and accuracy. The participants loved the examples, and one woman said that she loved that she could feel what a jellyfish looks like. Patrick split the parts, and students assembled the plate.



1. Staff member examining a finished 3D print
2. 3D Printing Education Program, grades 9-12, promotional flyer
3. Patrick Doran, IT Director, standing with 3D printers, scanner and other equipment
4. Braille disc being prepped in CAD software for 3D Printing
5. Finished 3D print of a shark using a Dremel Digilab printer





CALIFORNIA KINGSNAKE

Lepidochelys olivacea



1. Mayra Rivas, Education Assistant Manager, and Paul Nakamoto, Vice President of Guest Services, looking over the Bay Lab touch pool
2. Blue-Tongued Skink exhibit
3. Bay Lab exhibits and new Sharks: Evolution & Diversity wall

3.

THE GREAT WHITE SHARK

Carcharodon carcharias

Great White Sharks are the largest known predatory fish in the sea. They reach lengths of over **21 feet** (6.4 m) and can weigh up to **5,000 pounds** (2,268 kg). They have a conical snout, pitch black eyes, a heavy, mottled-shaped body, and a crescent-shaped, nearly equal-sided tail fin that is supported on each side by a keel. They have been recorded to reach speeds of **35 mph** in short bursts.

HABITAT

Great White Sharks live in a wide geographic range, the widest of any marine animal. They are found in all cold temperate and tropical waters. Last documented to north of 4,000 feet (1,200 m).

REPRODUCTION

Great White Sharks show a rapid rate of reproduction called Oviparity. The female retains eggs inside the body within a brood pouch, where the embryo develops, receiving nourishment from a yolk sac. The eggs hatch from the yolk sac into the uterus of the mother and the fetus is born viviparous, after approximately gestation period ("pregnancy") of over a year. **5-10 pups** each over **3 feet** (1.0 m) long are born. The life span of a Great White Shark is estimated to be over 30 years, almost certainly more at about 50 years old, which rarely exceeds 60 years of age.

4.

Young Great White Sharks eat fish (including other sharks) and sea turtles. They also eat seals, fish, sea turtles, sea otters, and squid. They are **apex predators** and **eat fish and seals**.

FUTURE UNKNOWN

The International Union for the Conservation of Nature (IUCN) has listed the Great White Shark as **Critically Endangered**.



STUDIO AQUA

Studio Aqua saw major success in the completion of another international aquarium consulting project, the concept for the future Jamaica Oceanarium in Montego Bay. Led by BayEcotarium President & CEO George Jacob through the Urban Development Corporation (UDC) in Jamaica, the concept for this state-of-the-art facility brought together a team of international experts including executive leadership from Aquarium of the Bay in Animal Care, Facilities & Life Support, Education, and Media.

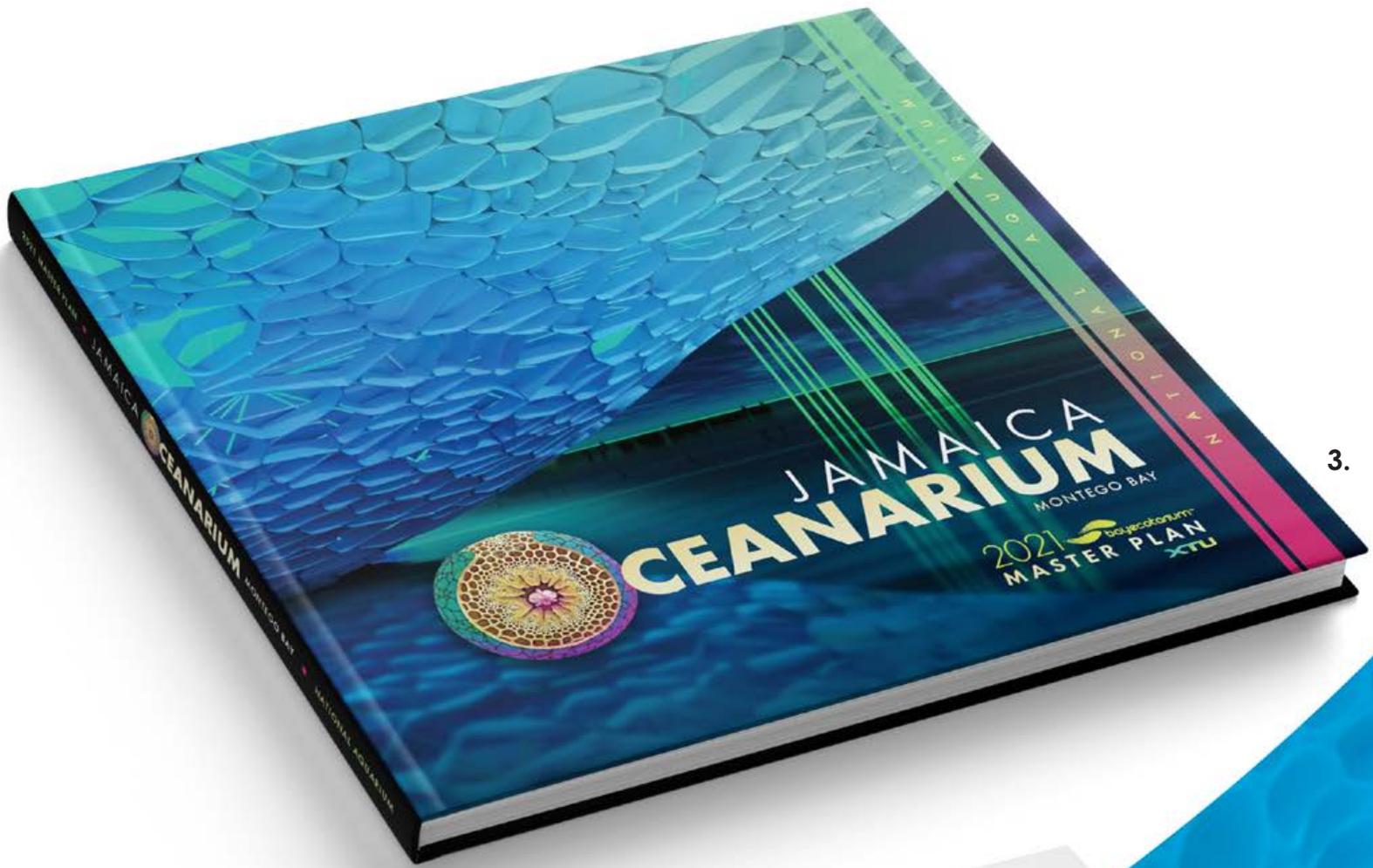
We also worked with French architectural firm X-TU and Norwegian branding firm Brandity to design a comprehensive plan for the establishment of a facility in order to drive a narrative of ocean conservation awareness, appreciation, and climate action.

This is a major impact investment to foster an appreciation for and a connection to our oceans and natural environment as humans. Featuring a ferry or water taxi dock, multiple waterfalls, mangrove walkway paths, ocean-view restaurants, offices, classrooms, theaters, and a collection of mostly native animals, the team designed concept vignettes, educational content, architectural concepts, facilities and animal care needs, and tourism collaborations for optimal operation.

The Master Plan was finalized and presented to the Prime Minister of Jamaica, Mr. Andrew Holness in July 2021. The plan was extremely well-received and is currently moving into the second phase, the business & risk analysis

1. Proposed site of the Oceanarium before construction begins.
2. The Oceanarium phytoplankton waterfall as seen at night.
3. Cover of the Jamaica Oceanarium Master Plan given to the Prime Minister of Jamaica, Mr. Andrew Holness
4. The exciting Oceanarium is thoroughly planned out, and the business and risk analysis stage is the next step.





3.



4.



▲ Threats to Coral Reefs: Climate Change exhibit wrap in Bay Lab

◀ New window graphics installed at the PIER 39 aquarium gift ship entrance, replacing last year's sea lion anniversary promotion.

OCEAN POLLUTION

Pollution of the oceans is widespread, worsening, and in most countries poorly controlled. Human activities result in a complex mixture of substances entering the aquatic environment.

It reaches the oceans through rivers, runoff, atmospheric deposition and direct discharges. Ocean pollution has multiple negative impacts on ecosystems and human health, particularly in vulnerable populations.

7 ON-GOING PROBLEMS

PLASTIC WASTE

Plastic is a rapidly increasing and highly visible component of ocean pollution. An estimated 10 million metric tons enter the ocean each year. Plastic pollution threatens marine mammals, fish and seabirds. It breaks down into microscopic microplastics, containing multiple manufactured chemicals that can enter marine organisms, including species consumed by humans.

OIL SPILLS

Oil spills have occurred with increasing frequency in recent years as the result of growing global demand for petroleum. These spills have resulted in direct release of millions of liters of crude oil and other petroleum products into the oceans. Petroleum-based pollutants reduce photosynthesis in marine microorganisms that generate oxygen. They also disrupt food networks, destroy fragile habitats such as seagrass and coral reefs, and foul beaches.

CHEMICALS

Manufactured chemicals - pesticides, herbicides, and some pharmaceuticals, pharmaceutical chemicals, and industrial waste, can disrupt endocrine signaling, reduce reproductive success, and increase risk of cancer. They can also damage coral reefs.

MERCURY

Mercury is released from two main sources - coal combustion and small-scale gold mining. Combustion of oil, gas, and coal releases mercury and compounds that can cause kidney and nervous system damage. Mercury increases risk for dementia and neurological disease.

PESTICIDES

Pesticides are chemicals designed to kill harmful insects and that can harm other species on other living organisms, including humans. Pesticides contribute to global warming as they break down and are transported to other areas.

NUTRIENTS

Industrial wastes, runoff from animal husbandry and human sewage, nutrient fertilizers and growth of harmful algal blooms (HAB), harmful bacteria and microplastic pollution.

THE WAY FORWARD



NOISE

Underwater noise from shipping, construction, and other human activities is increasing and can harm marine life.

In Trash Box End of the Line for Whales?



▲ Ocean pollution exhibit wall installed in Discover the Bay

▲ Cash and photo desks wrapped with new graphics in the aquarium gift shop



STUDIO AQUA

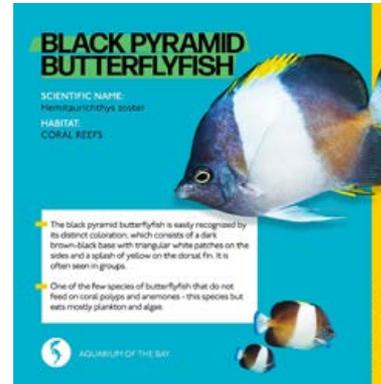
Social Media

Social media continued to be a main engine for promoting Aquarium initiatives into our 25th year of operation. Early into the year, social media continued to be utilized for virtual tours and events, including a virtual “Space Refractions” concert in late December and virtual Sankofa Days tour in celebration of Black History Month in February. Before the Aquarium opened in March, the social media team continued to plan and strategize for its 25th anniversary, which involved adding and promoting 25 new species to aquarium collections. A full list of new species was added to the external aquarium media kit and a social media post was made each week to describe each new species, their location for viewing at the Aquarium, a few fun facts, and pieces of relevant information as well. These were posted in conjunction with the 25th anniversary of the Aquarium.

When the Aquarium opened back up to the public on March 4th, 2021, this posed an opportunity to phase out of virtual-based engagement and refocus on in-person engagement at the Aquarium of the Bay. Continuing to promote COVID-19 protocol was integral in enabling that transition. Timed ticketing, reduced capacity, increased sanitization stations, mask requirements, and social distancing guidance continued to be promoted and adapted to meet city and state regulations, as well as providing a higher level of comfort for guests.

Social media was also tapped into significantly to promote the new EcoXpeditions division, diving for citizen scientists dive course, updates to the Ecostore, a “TAHOE” \$5 off discount code, and events such as the 2021 TBI Awards, Blue Marble Benefit, Fleet Week Watch Party, an Evening with Sylvia Earle, Underwater Pumpkin Carving and River Otter Snow Days.

1.



2.

1. Social media species campaign
2. Volunteer social media post
3. Fleet Week discount promotion
4. Underwater pumpkin carving
5. EcoXpeditions
6. Earth Day greetings
7. An Evening with Sylvia Earle book signing event
8. Celebrating 25 years with 25 new species

3.



HAPPY FLEET WEEK

AQUARIUM OF THE BAY IS HONORED TO RECOGNIZE THE WOMEN AND MEN SERVING IN OUR ARMED FORCES

FREE AQUARIUM ADMISSION FOR ACTIVE AND VETERAN SERVICE MEMBERS DURING FLEET WEEK.
+20% OFF ADMISSION FOR THE REST OF PARTY

*Valid Military ID Required | Discount Codes 28 & 71x at our Main Entrance

aquarium of the bay | ASSOCIATION OF ZOOS & AQUARIUMS | Smithsonian Affiliate | SAN FRANCISCO GREEN BUSINESS

4.



UNDERWATER PUMPKIN CARVING

WATCH OUR DIVERS CARVE HALLOWEEN PUMPKINS UNDERWATER!

OCT 30 & 31
*Included In General Admission Price

ASSOCIATION OF ZOOS & AQUARIUMS | Smithsonian Affiliate | SAN FRANCISCO GREEN BUSINESS

5.



MAKE AN IMPACT. HELP US SAVE THE OCEAN
CONTRIBUTE TO CRUCIAL, HANDS-ON MARINE CONSERVATION WORK & COMMUNITY ENGAGEMENT

- SHARK RESEARCH & CONSERVATION
- CORAL REEF SURVEYS & RESTORATION
- MARINE PROTECTED AREA EXPERIENCE
- INVASIVE SPECIES MANAGEMENT
- COMMUNITY ENGAGEMENT

- O'AHU, HAWAII: AUGUST 7-14, 2021
- FLORIDA KEYS: OCTOBER 16-23, 2021
- CABO PULMO, MEXICO: NOV. 14-21, 2021
- COSTA RICA: JUNE, 2022

REACH OUT FOR MORE INFO OR TO REGISTER!

AN ONLINE EVENT | DIRECTOR OF MARINE RESEARCH & CONSERVATION | LEARN MORE | DIRECTOR OF CONSERVATION SALES & PROMOTION

ecopeditions

6.

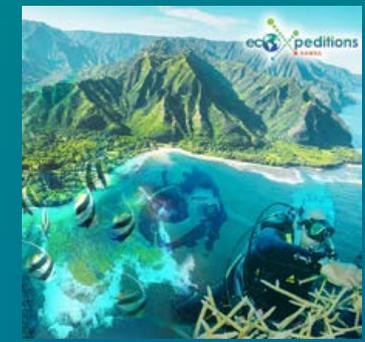


earth day greetings!

AQUARIUM OF THE BAY 25 YEARS

THE BAY INSTITUTE 40 YEARS

bayecotarium
CLIMATE RESILIENCE & OCEAN CONSERVATION LIVING MUSEUM
www.bayecotarium.org



ecopeditions

7.



An Evening with **SYLVIA EARLE**

OCEAN
A GLOBAL VOICE

Aquarium of the Bay invites you to celebrate Dr. Sylvia Earle and the launch of her highly anticipated book

Nov. 18, 2021
Thursday
6:30 - 8:30 pm

RSVP BY Monday, November 1st
RSVP@bayecotarium.org | 415.623.5313

Bay Model, 2100 Bridgeway, Sausalito, CA 94965

8.



CELEBRATING 25 YEARS OF OCEAN CONSERVATION

25 NEW SPECIES

25 YEARS OF CARING FOR **200+** SPECIES **24,000** ANIMALS

ASSOCIATION OF ZOOS & AQUARIUMS | AQUARIUM OF THE BAY PIER 39 | Smithsonian Affiliate



OCEAN
A GLOBAL VOICE

An Evening with **SYLVIA EARLE**

Nov. 18, 2021
Thursday
6:30 - 8:30 pm

RSVP BY Nov. 1st
RSVP@bayecotarium.org | 415.623.5313



CELEBRATING 25 YEARS OF OCEAN CONSERVATION

25 NEW SPECIES

25 YEARS OF CARING FOR **200+** SPECIES **24,000** ANIMALS

ASSOCIATION OF ZOOS & AQUARIUMS | AQUARIUM OF THE BAY PIER 39 | Smithsonian Affiliate



CELEBRATING 25 YEARS OF OCEAN CONSERVATION

25 NEW SPECIES

25 YEARS OF CARING FOR **200+** SPECIES **24,000** ANIMALS

ASSOCIATION OF ZOOS & AQUARIUMS | AQUARIUM OF THE BAY PIER 39 | Smithsonian Affiliate



CONSERVATION OF SHARKS

With fear counteracting conservation of sharks, scientists and environmentalists have aimed to improve the knowledge on sharks to aid management strategies, and influence policy and legislation. Sharks can play a critical role in marine ecosystems and maintain balance in the ecosystem. As a top predator, removal of sharks can have a ripple effect throughout the food web. Large sharks also commonly prey upon sea turtles, seabirds and marine mammals. In fact, sharks are some of the few predators of large marine mammals. Because of this, their presence or absence can have a large effect on prey populations.

A hammerhead shark was killed after swimming into a gillnet.



HUMAN IMPACT

Approximately 100 million sharks are killed every year by humans both by commercial target and by-catch and recreational fisheries. It is estimated that over 30% of shark and ray species are threatened with extinction, and are twice as likely to become extinct versus bony fishes.

VULNERABLE

Most sharks take several years to reach sexual maturity, and have few offspring each year. These facts make sharks very vulnerable to over-exploitation.

SHARK-FINNING

Fishery fins are the most valuable part of a shark. The targeted shark-fin fisheries around the world are trading the fins of roughly 100 to 273 million sharks every year destined for the Asian market - shark fin soup. Shark finning is a practice of removing the fins from live sharks, and the sharks thrown back into the water to leave space on the boat. They will then die as they cannot move without their fins.

PROTECTION

The International Union for the Conservation of Nature (IUCN) has urged governments from across the world to protect sharks, and has given rise to several laws and regulations. Such regulations include the Shark Finning Prohibition Act and the Shark Conservation Act in the USA. Hawaii was the first U.S. state to ban the possession, sale and trade of shark fins.

A hammerhead is heavily cut apart by a commercial shark-fin fishery (Shark Finning). From one hammerhead, fishermen will cut multiple shark fins, leaving behind the body with only a few centimeters left of shark.



Shark fins being sold at a fish market.

THE WHALE SHARK

Rhincodon typus

The Whale Shark is the largest fish in the world which has been recorded at 39 feet (12 m) long. This is about the size of a school bus. The white spots on their back is a very unique signature, and is used to differentiate between individual whale sharks, similar to fingerprints in humans. Their underside is white, and this countershading pattern helps the Whale Shark to avoid predation. Juvenile Whale Sharks are often preyed upon by blue sharks, basking sharks, and killer whales.

ALL MOUTH, NO BITE

Whale Sharks have a distinctive large gaping mouth and 2 small eyes. Despite its large size, this shark is a filter-feeder and spends much time with its mouth open removing plankton from the water column. They still, however, have about 3,500 small teeth, but do not use them.

HABITAT

The fish is primarily pelagic and can be found in coastal and oceanic areas, in all tropical and warm temperate seas. It is occasionally known to dive to depths of over 4,200 feet (2,000 m), but is normally found at the surface or in shallow depths.

Like human fingerprints, whale sharks have a unique pattern of spots which allow individual sharks to be identified.

SEASONAL FEEDINGS

Whale Sharks are migratory and have 2 distinct sub-populations: an Atlantic and an Indo-Pacific. Seasonal feeding aggregations occur at several oceanic areas such as the Persian Gulf, Ningaloo Reef (Australia), The Galapagos, Mexico and southern China. One of the largest aggregations occurred in 2011 off the Yacatoran Coast, where more than 400 whale sharks were recorded.

Whale Sharks aggregating to feed.



SHARKS

EVOLUTION & DIVERSITY



THE GREAT WHITE SHARK

Carcharodon carcharias

Great White Sharks are the largest known predatory fish in the sea. They reach lengths of over **21 feet** (6.4 m) and can weigh up to **5,000 pounds** (2,248 kg). They have a conical snout, pitch black eyes, a heavy, torpedo-shaped body, and a crescent-shaped, nearly equal-lobed tail fin that is supported on each side by a keel. They have been recorded to reach speeds of **35 mph in short bursts**.

HABITAT

These sharks are found across a wide geographic range, the widest of any marine animal. They are found in all cold temperate and tropical waters, and documented to depths of 4,000 feet (1,200 m).

Breaching

Great White sharks can breach 10 feet (3 m) out of the water and swim 100 feet (30 m) in the air.



REPRODUCTION

Great White sharks show a special kind of reproduction called Oviparity. The female retains eggs inside the body within a brood chamber, where the embryos develop receiving nourishment from a yolk sac. The pups hatch from the egg capsules inside the uterus of the mother and are born toothed afterwards. After an estimated gestation period ("pregnancy") of over a year, **2-10 pups each over 5 feet (1.5 m) long** are born. The life span of a Great White Shark is estimated at more than 30 years. Males become mature at about 10 years old, while female mature at about 15 years old.



Shark teeth are made of dentin, a hard, yellowish-brown material. They are constantly being replaced throughout the life.

DIET

Young Great White Sharks eat fish (including other sharks and rays), when they become older, they favorily prey becomes sea mammals, especially **sea lions and seals**.



FUTURE UNKNOWN

The International Union for the Conservation of Nature (IUCN) has listed the Great White Shark as **Critically Endangered**.

Sharks belong to a subclass of animals called **Elasmobranchii** (commonly called Elasmobranchs) which also comprise rays and skates. All animals in this group have **skeletons made of cartilage**, not bone like other fish. Cartilage (the same material that is present in our ears and nose), makes sharks lighter in the water and able to swim longer distances more efficiently. There are over **500 different species** of sharks in our oceans today.

MILLIONS OF YEARS OLD

Sharks are one of the oldest creatures and the first record found in Siberia was from the Silesian Period from a shark that lived **420 million years ago** which was **before the dinosaurs**. The oldest teeth found are from the Devonian Period, some 400 million years ago. There were only two continents then, surrounded by a warm shallow sea.



SHARKS ARE BUILT FOR SPEED

Their scales are actually called **dermal denticles** which allow water to flow smoothly past the skin, reducing the resistance for swimming. They are streamlined with **torpedo-like shaped bodies** reducing drag through the water. Sharks do not have swim bladders like other fish to stay neutrally buoyant in the water. They instead rely on cartilage in the skeleton and fatty liver oils, so they use less energy for propulsion rather than buoyancy.



The **fastest shark** is the Shortfin Mako Shark (*Isurus paucus*) which cruises at 23 miles per hour, with short bursts of 44 miles per hour.



ALL SIZES

The **smallest shark** is the Dwarf lantern shark (*Etmopterus perrini*) at 4 inches (102 mm) and the **largest shark** is the whale shark (*Phaenacodon lewini*) which has been recorded at 39 feet (12 m) long.

The smallest shark is a dwarf lantern shark. It weighs 100g and is 10cm long.



6 SENSES

In addition to their speed, sharks have 4 well developed senses: vision, taste, hearing, touch and electro-perception, which make them extremely good hunters.



The Bay Lab now features a new exhibit called Sharks: Evolution and Diversity. Spanning 58 feet, it features four discs that highlight unique facts and conservation efforts.





2.



1.

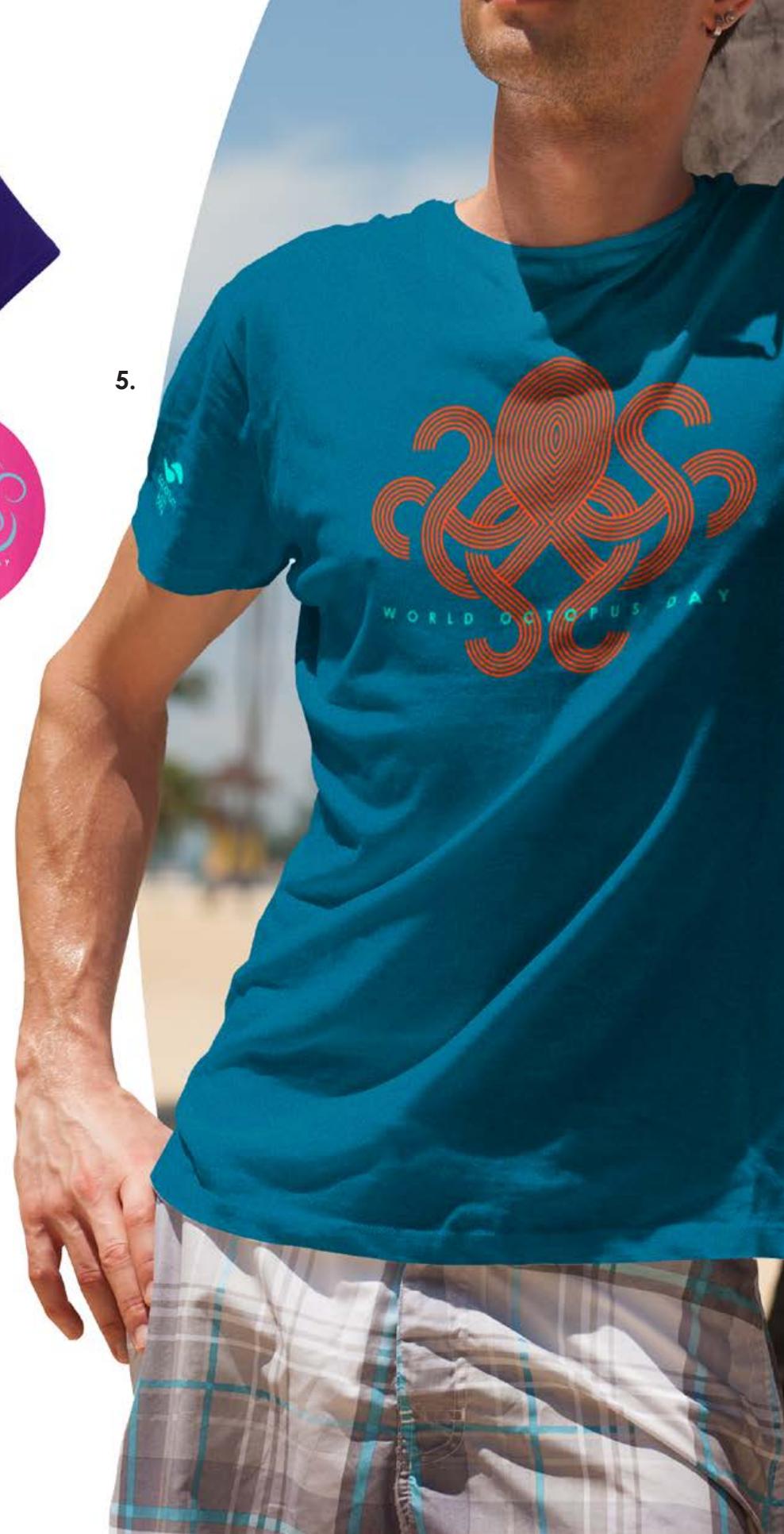
1. New Bay Model Visitor Center logo for merchandise
2. BayEcotarium Yoga Wear
3. Limited edition EcoXpedition shirt
4. Women's World Octopus Day shirt
5. Unique shirt to celebrate World Octopus Day
6. Reflective shirt for the 25th Aquarium of the Bay anniversary



3.

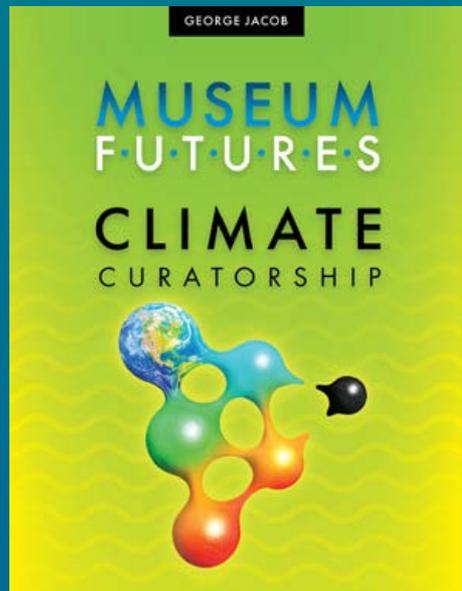
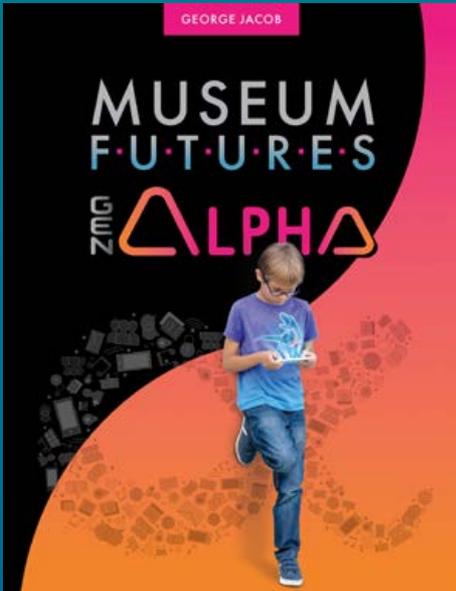


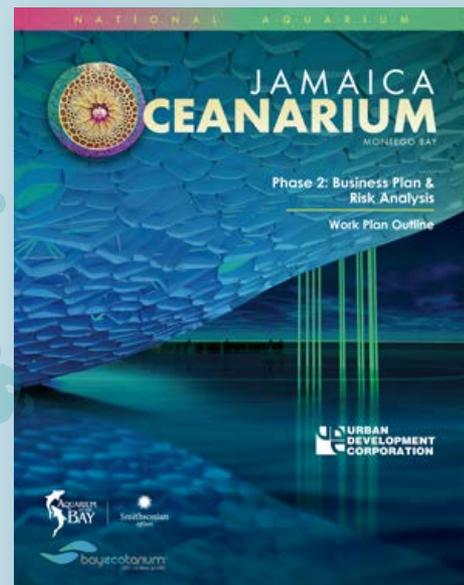
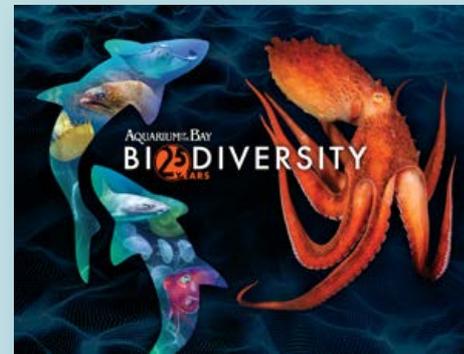
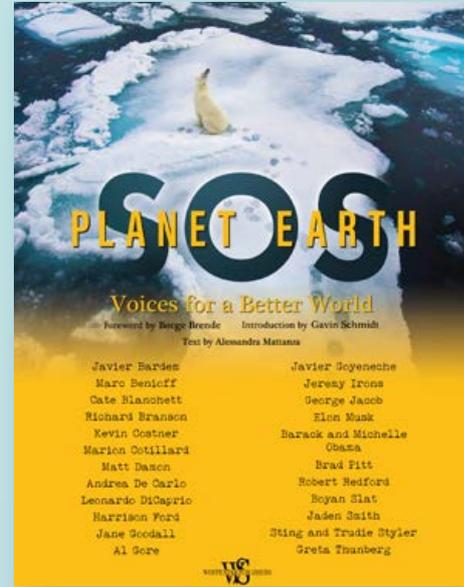
5.



6.







EcoXpeditions pull-up banners for trade show displays

ecoXpeditions
bayecotarium

SAVE THE OCEANS WITH US!

MAKE A DIFFERENCE

MARINE CONSERVATION

COMMUNITY ENGAGEMENT

DESTINATIONS
FLORIDA KEYS • COSTA RICA
MEXICO • HAWAII +MORE

TRAVEL WITH US
EcoXpeditions@bayecotarium.org

VISIT
Aquariumofthebay.org/Xpeditions

ASSOCIATION OF AQUARIUMS
SOUTH FLORIDA
SOUTH FLORIDA
GREEN BUSINESS

ecoXpeditions
bayecotarium

SAVE THE OCEANS WITH US!

MAKE A DIFFERENCE

MARINE CONSERVATION

COMMUNITY ENGAGEMENT

DESTINATIONS
FLORIDA KEYS • COSTA RICA
MEXICO • HAWAII +MORE

TRAVEL WITH US
EcoXpeditions@bayecotarium.org

VISIT
Aquariumofthebay.org/Xpeditions

ASSOCIATION OF AQUARIUMS
SOUTH FLORIDA
SOUTH FLORIDA
GREEN BUSINESS

ecoXpeditions
bayecotarium

SAVE THE OCEANS WITH US!

MAKE A DIFFERENCE

MARINE CONSERVATION

COMMUNITY ENGAGEMENT

DESTINATIONS
FLORIDA KEYS • COSTA RICA
MEXICO • HAWAII +MORE

TRAVEL WITH US
EcoXpeditions@bayecotarium.org

VISIT
Aquariumofthebay.org/Xpeditions

ASSOCIATION OF AQUARIUMS
SOUTH FLORIDA
SOUTH FLORIDA
GREEN BUSINESS

ecoXpeditions
bayecotarium

SAVE THE OCEANS WITH US!

MAKE A DIFFERENCE

MARINE CONSERVATION

COMMUNITY ENGAGEMENT

DESTINATIONS
FLORIDA KEYS • COSTA RICA
MEXICO • HAWAII +MORE

TRAVEL WITH US
EcoXpeditions@bayecotarium.org

VISIT
Aquariumofthebay.org/Xpeditions

ASSOCIATION OF AQUARIUMS
SOUTH FLORIDA
SOUTH FLORIDA
GREEN BUSINESS

40 YEARS

of ENVIRONMENTAL ADVOCACY

The Bay Institute (TBI) is the policy, advocacy and research arm of Bay.org. TBI's scientists and policy experts work to protect the San Francisco Bay estuary's unique fish and wildlife species; restore the habitats and processes that support a healthy ecosystem; promote sustainable water and land management practices and measure how well the ecosystem - and management efforts to protect it - is doing. To achieve these goals, TBI conducts technical analyses, engages in regulatory, legislative and voluntary decision-making processes, and educates media, decision-makers and the public on key issues.

- THE BAY INSTITUTE**
- 1981** The Bay Institute (TBI) was founded.
 - 1984-1985** Through a combination of public advocacy and annual scientific conferences, TBI works to understand and address the impacts of acid and dissolved metals of farmland from watersheds drainage.
 - 1986-1988** TBI makes the "case for the Bay" in state proceedings to set new water quality standards.
 - 1987** TBI's "Clean Water for the Bay" report on the San Francisco Bay estuary's water quality is published. TBI's report is the first to call for a "Clean Water Act" for the Bay.
 - 1992** Coalition with the Bay Area Water Resources Council and others to secure passage of federal water reform bill (Clean Water Project Improvement Act).
 - 1994** After forcing the Environmental Protection Agency to develop modern water quality standards, TBI and partners require the agency to accept to accept stronger water quality standards for the Bay.
 - 1996-1997** TBI's efforts to prevent agricultural water pollution in the San Joaquin valley result in thousands of acres of farm wastewater ponds being closed or modified and in agreements to eliminate toxic farm runoff over the long term.
 - 1998** TBI publishes "From the Delta to the Sea: The Ecological History of the San Francisco Bay-Delta Watershed," the first and only comprehensive analysis of the entire estuary and its watershed. TBI's "Delta Water Quality and Ecosystem Restoration" report, TBI's environmental education program, is published. A watershed comprising over 100,000 acres of stream restoration.
 - 2003** TBI issues first ever Ecological Science for San Francisco Bay estuary.
 - 2004-2005** National victories include helping pressure U.S. Fish and Wildlife Service to end proposed development of an additional 1,800 acres in the North Bay.
 - 2006** 300 landmark agreement is reached to improve flows and habitat on the Pajaro River. TBI is the state's lead partner in the restoration of the San Joaquin River.
 - 2008-2009** After TBI and its allies successfully challenge the state's water rights, the federal government backs new, stronger requirements for both species.
 - 2013** TBI issues "Water-Use Law" report on using flow meters to control stream flows, reducing construction of the City's water treatment plant, and other projects.
 - 2016** TBI continues to work with the state and federal government to protect the San Joaquin River from agricultural runoff, including the state's water rights, and other projects.
 - 2018** TBI issues "Water-Use Law" report on using flow meters to control stream flows, reducing construction of the City's water treatment plant, and other projects.
 - 2019** As part of a 2019 settlement, San Joaquin River water rights are restored to the Bay Area.
 - 2020** Approval of 1997 agreement, also change of wildlife agricultural drainage to the San Joaquin River's watershed.
 - 2021** TBI and its allies continue to work with the state and federal government to protect the San Joaquin River from agricultural runoff, including the state's water rights, and other projects.



PACIFIC TREE FROG

ROSY BOA

ASSOCIATION OF ZOOS & AQUARIUMS & AQUARIUM OF THE BAY Smithsonian Affiliate



expeditions

BAJA MEXICO
La Ventana – Sea of Cortez • Nov 29 – Dec 5

ENGAGE WITH WHALES, RAYS AND SEA LIONS

SPECIAL 50% OFF PROMOTION
RSVP BY NOV. 15

REGISTER TODAY!
For more information or to register, please contact us at:
angelina@bayecotarium.org 415-262-4723

bayecotarium™
Environmental Advocacy
Ocean Conservation



Smithsonian Affiliate

AQUARIUM OF THE BAY
ASSOCIATION OF ZOOS & AQUARIUMS &



Animal care staff Safety Training in immersion suits on board Research Vessel Mike Reagle.

Mike McGill with a scallop shark, caught while sevensill fishing, safely returning it to the bay.

Smithsonian Affiliate

AQUARIUM OF THE BAY
ASSOCIATION OF ZOOS & AQUARIUMS &

#GIVING TUESDAY

DONATE TODAY
HELP US CONSERVE AND PROTECT THE SAN FRANCISCO BAY

25 YEARS OF OCEAN CONSERVATION



Smithsonian Affiliate

aquarium of the bay
ASSOCIATION OF ZOOS & AQUARIUMS &

BLACK HISTORY MONTH

SANKOFA Days @THE BAY
VIRTUAL EVENT • FEBRUARY 19



Smithsonian Affiliate

AQUARIUM OF THE BAY
ASSOCIATION OF ZOOS & AQUARIUMS &

earth day greetings!

AQUARIUM OF THE BAY 25 YEARS

THE BAY INSTITUTE 4 YEARS



bayecotarium™
CLIMATE RESILIENCE & OCEAN CONSERVATION **living MUSEUM**

expeditions
EXPLORE ENGAGE EXPERIENCE



Smithsonian Affiliate

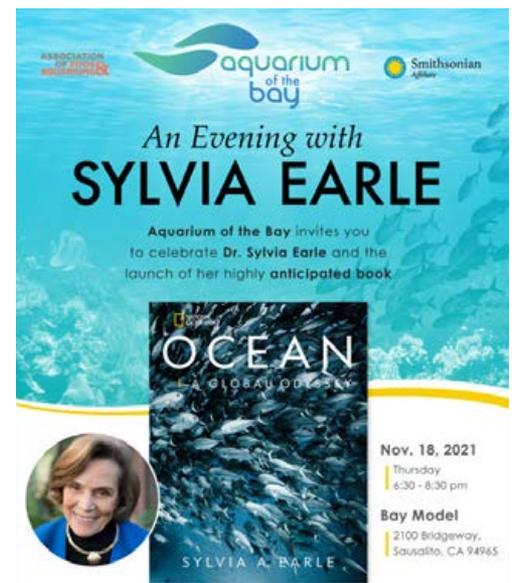
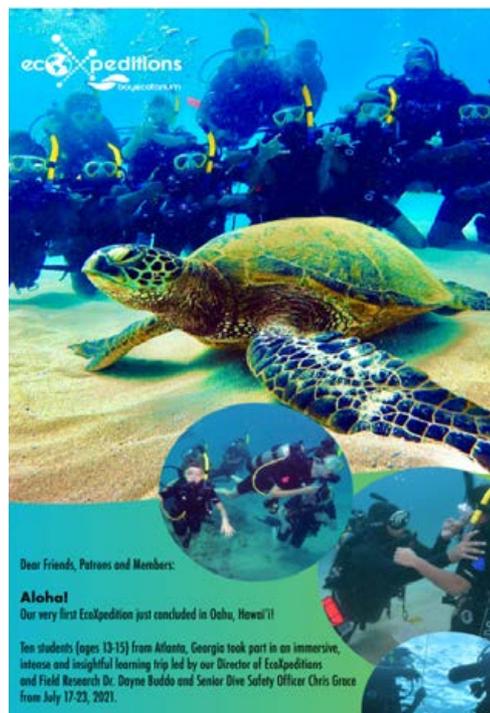
aquarium of the bay
ASSOCIATION OF ZOOS & AQUARIUMS &

expeditions
EXPLORE ENGAGE EXPERIENCE



Smithsonian Affiliate

AQUARIUM OF THE BAY
ASSOCIATION OF ZOOS & AQUARIUMS &



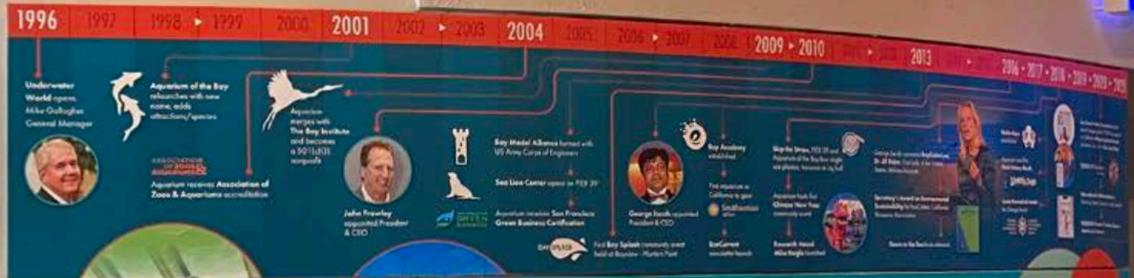
Various mastheads from 2021 email campaigns

Anniversary wall
celebrating Aquarium of
the Bay 25 year history

OCEAN CONSERVATION

AQUARIUM
OF THE
BAY
SAN FRANCISCO

YEARS



25 YEARS OF OCEAN CONSERVATION

186 SPECIES
24,000+ VISITORS PER DAY

1.7 MILLION VISITORS PER YEAR

TRANSFORMATION

OUR FUTURE

PLEASE ENTER HERE

Disco

PLEASE ENTER HERE

Enhanced guest services
welcome desk

Y

GUEST SERVICES



“ Museums of the future will have little choice but to adopt AI driven business models embedded with curated data harvesting to enable viability and sustainability. ”

George Jacob Ricos
President & CEO, BayEcoforum

HARD COVER
NOW AVAILABLE

bayecotarium.org/futures

bayecotarium

“ Museums of the future will have little choice but to adopt AI driven business models embedded with curated data harvesting to enable viability and sustainability. ”

George Jacob Ricos
President & CEO, BayEcoforum

HARD COVER
NOW AVAILABLE

bayecotarium.org/futures

bayecotarium

“ Corona has put the future of museums at crossroads- can socially distanced technology bridge the gap between content, curation, conversation, critical thinking and creativity? ”

George Jacob Ricos
President & CEO, BayEcoforum

HARD COVER
NOW AVAILABLE

bayecotarium.org/futures

bayecotarium

“ Algorithms of tomorrow driven by emotional AI will soon enmesh with experiential immersive interpretive learning... uncured and unvarnished - challenging much debated museum definitions, equating elasticity beyond the conventional, to its very existence. ”

George Jacob Ricos
President & CEO, BayEcoforum

HARD COVER
NOW AVAILABLE

bayecotarium.org/futures

bayecotarium

“ Corona has put the future of museums at crossroads- can socially distanced technology bridge the gap between content, curation, conversation, critical thinking and creativity? ”

George Jacob Ricos
President & CEO, BayEcoforum

HARD COVER
NOW AVAILABLE

bayecotarium.org/futures

bayecotarium

“ Machine Learning and AI aided by retrieval search engines, are already making in-roads into cyber-curation of content at lightning speeds. Their applied impact on museums is inevitable, as the world re-opens to a new-norm of post-pandemic reality. ”

George Jacob Ricos
President & CEO, BayEcoforum

HARD COVER
NOW AVAILABLE

bayecotarium.org/futures

bayecotarium

“ Museums of the future will have little choice but to adopt AI driven business models embedded with curated data harvesting to enable viability and sustainability. ”

George Jacob Ricos
President & CEO, BayEcoforum

HARD COVER
NOW AVAILABLE

bayecotarium.org/futures

bayecotarium

“ Algorithms of tomorrow driven by emotional AI will soon enmesh with experiential immersive interpretive learning... uncured and unvarnished - challenging much debated museum definitions, equating elasticity beyond the conventional, to its very existence. ”

George Jacob Ricos
President & CEO, BayEcoforum

HARD COVER
NOW AVAILABLE

bayecotarium.org/futures

bayecotarium

“ It is only a matter of time before post-pandemic playful robot guides in museums, science centers, zoos and aquariums will transcend linguistic boundaries, offer Deep-Learning and cloud-enabled curated content cross-fertilized by IoT, and aided by Emotional AI. Many mobile apps are already ahead of the curve! ”

George Jacob Ricos
President & CEO, BayEcoforum

HARD COVER
NOW AVAILABLE

bayecotarium.org/futures

bayecotarium

“ Algorithms of tomorrow driven by emotional AI will soon enmesh with experiential immersive interpretive learning... uncured and unvarnished - challenging much debated museum definitions, equating elasticity beyond the conventional, to its very existence. ”

George Jacob Ricos
President & CEO, BayEcoforum

HARD COVER
NOW AVAILABLE

bayecotarium.org/futures

bayecotarium

“ Corona has put the future of museums at crossroads- can socially distanced technology bridge the gap between content, curation, conversation, critical thinking and creativity? ”

George Jacob Ricos
President & CEO, BayEcoforum

HARD COVER
NOW AVAILABLE

bayecotarium.org/futures

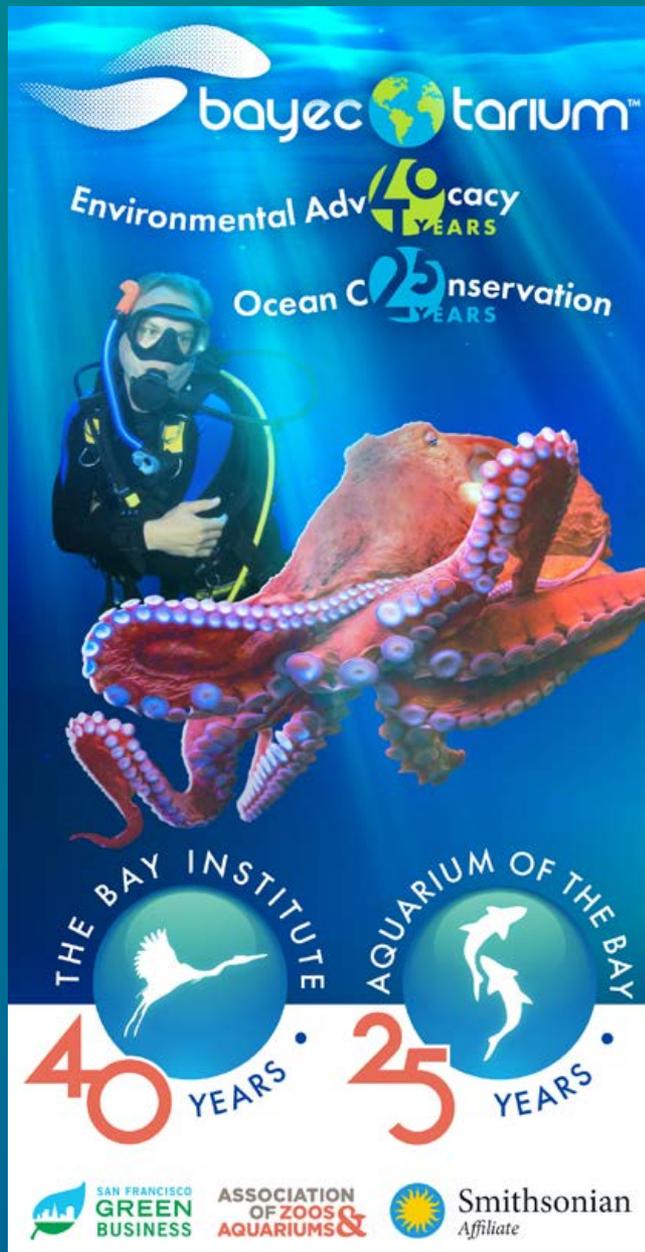
bayecotarium

Quotes from MUSEUM FUTURES: Corona Conundrum book for social media.

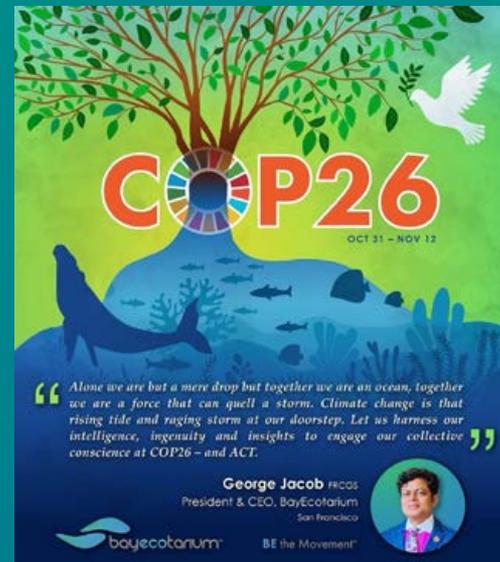
1.



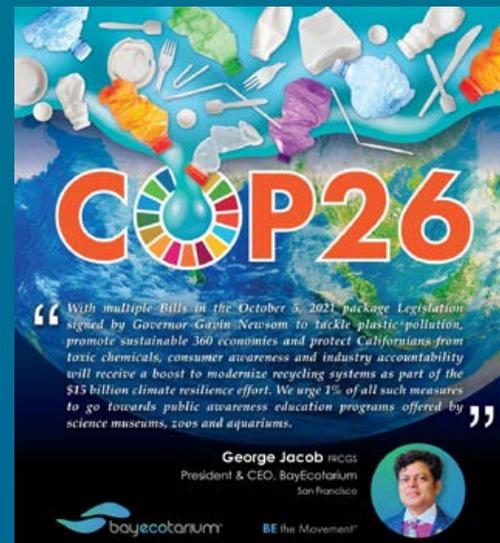
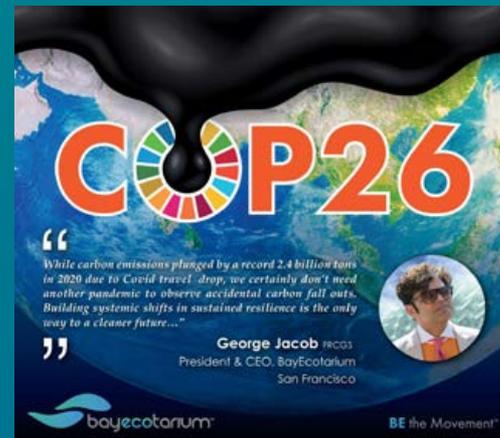
2.



3.



1. 25 years of ocean conservation digital banner for Aquarium of the Bay
2. Digital poster celebrating the anniversaries for The Bay Institute and Aquarium of the Bay
3. COP26 quotes for social media



1.

bayecotarium™

AQUARIUM OF THE BAY
SAN FRANCISCO

Red Curtain Addict

Clearinghouse CDFI

CALIFORNIA TRAVEL ASSOCIATION

Alaska AIRLINES

RH RIDGEMONT HOSPITALITY

I hear you... Can you hear me?

Opening Remarks
H.E. George Papandreou
Former Prime Minister of Greece

Guest of Honor
Eleni Kounalakis
Lt. Governor of California

Master of Ceremonies
Dan Ashley

Blue Marble Award
Dr. Sylvia Earle

Blue Marble Award
Michael B. Gallagher

BLUE MARBLE RECEPTION
JUNE 8, 2021
WORLD OCEAN DAY

CLIMATE & OCEAN CONSERVATION LIVING MUSEUM
Celebrating four decades of climate leadership, advocacy, education, environmental stewardship, and ocean conservation.

THE BAY INSTITUTE 40 YEARS

EARLY BIRD TICKETS: \$500
SPONSOR TABLE FOR 6: \$5,000
501 c3 tax donations also considered

TIME: 5:30PM (PST)
VENUE: HAYES MANSION
200 Edenvale Avenue San Jose, CA

EMAIL: BMB@BAYECOTARIUM.ORG
BLUE CARPET EVENT:
Dress Code - BLUE

TICKETS: BAYECOTARIUM.ORG/BMB

AQUARIUM OF THE BAY 25 YEARS

1. Blue Marble Benefit reception promotional banner
2. Save the Date featuring a Napoleon Wrasse
3. Save the Date featuring a Leopard Shark
4. Step-n-repeat backdrop for the Blue Marble Benefit blue carpet photo
5. Gift back for Blue Marble Benefit guests

I hear you... Can you hear me?

SAVE THE DATE
JOIN US ON THE BLUE CARPET
JUNE 8, 2021

bayecotarium™

AQUARIUM OF THE BAY

Benefit BLUE MARBLE™

VENUE: HERBST THEATRE
BMB@BAYECOTARIUM.ORG
BAYECOTARIUM.ORG/BMB

THE BAY INSTITUTE 40 YEARS

AQUARIUM OF THE BAY 25 YEARS

2.

I hear you... Can you hear me?

SAVE THE DATE
JOIN US ON THE BLUE CARPET
JUNE 8, 2021

bayecotarium™

AQUARIUM OF THE BAY

Benefit BLUE MARBLE™

BMB@BAYECOTARIUM.ORG
BAYECOTARIUM.ORG/BMB

THE BAY INSTITUTE 40 YEARS

AQUARIUM OF THE BAY 25 YEARS

3.



bayecotarium™

BLUE MARBLE
Benefit
2021 | AQUARIUM
OF THE
BAY
SAN FRANCISCO



4.



5.

ecosynthesis our future



“

Environment Education is potential set in motion. The vision for BayEcotarium is exceptional and will accelerate a generational movement for our Blue Marble.

DR. JILL BIDEN

First Lady of the United States



“

We envision a landmark environmental edifice dedicated to climate literacy and ocean conservation, the BayEcotarium is our future and the future is now

GEORGE JACOB FRCGS
President & CEO, BayEcotarium





“

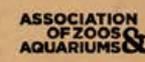
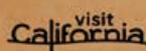
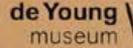
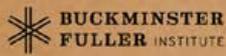
It is not just our climate, but our culture, our lives and the coming generations that are being threatened.... But this threat may also contain an opportunity, the good news being that it gives us the possibility of working together to build a better world.

H.E. GEORGE PAPANDREOU
Prime Minister of Greece

“

Driven by science on Climate change, we led the charge across the country to fulfill US commitment to Paris Climate Agreement as founding signatory to Under2Coalition to reducing greenhouse emissions.

ELENI KOUNALAKIS
Lieutenant Governor of California



1.



2.



1. COP26 email signature
2. Anniversary email signature
3. Website pop-ups for Fleet Week, EcoXpeditions, and Face Masks
4. New web-pages launched for EcoXpeditions and 3D Printing Lab education program

3.

OCTOBER 9 • 11AM-4PM

aquarium of the bay

WATCH PARTY
FLEET WEEK

TICKETS
Fleetweekwatchparty.eventbrite.com

ecopeditions
LIFETIME EXPERIENCES

HANDS-ON MARINE SCIENCE & CONSERVATION

EXPLORE WITH US!
REGISTER TODAY

aquarium of the bay

CREATIVE
FACE MASKS
by AQUARIUM OF THE BAY

Choose from 6 designs
AVAILABLE NOW >>

4.

ecopeditions
EXPLORE ENGAGE EXPERIENCE

SAVE THE OCEAN WITH US!

MAKE A DIFFERENCE
MARINE CONSERVATION
COMMUNITY ENGAGEMENT

50% OFF
Save on BAJA MEXICO and ISLAND OF OAHU, HAWAII

2021 DESTINATIONS

NOV 28 BAJA MEXICO
LAVENTANA - SEA OF CORTEZO

8-10 Inclusive cabin direct adventures to Baja Mexico at the Sea of Cortez

Dates: November 28 - December 3, 2021
Duration: 7 days (nights)
Registration: Complete by November 15, 2021

TRIP ACTIVITIES

- Teacher/Student/Leader - Street Cartel
- Whale Shark (Larvae) and Shark with Whale Shark
- Sea Lion
- Protected Area: Red Sea Urchin and Seals
- Hairy Fox, Seals and Seals
- Whale and Dolphin Feeding and Seals
- Swim through Supergiant of Pacific Sea Urchin
- Sea Urchin Feeding and Seals
- Inland Marine Science: Spoken of the Cortez
- 4 Nights Protected Area
- Sea Urchin Feeding and Seals (Seals and Seals)

TRIP COST - 50% OFF

Single Occupancy	Double Occupancy	Trip Occupancy
\$1,599 Per Person (\$16k \$1,500)	\$1,899 Per Person (\$18k \$1,800)	\$1,799 Per Person (\$18k \$1,800)

INCLUDED:

- Round-trip airfare to Cortez
- Taxes
- Porter/Transportation to port on Board
- Round-trip airfare to and from the port
- 24-hour on-board
- All meals and fully stocked complimentary snacks, drinks, and beverages, including alcoholic beverages in moderation

NOT INCLUDED:

- Travel insurance
- Gratuities
- Personal expenses
- Any activities outside of the itinerary
- Airfare to and from home
- Change in itinerary
- The maximum of \$1,000 for loss of equipment, clothing and/or other items

VIEW DAILY ITINERARY

3D PRINTING
EDUCATION PROGRAM • GRADES 9-12

STATE-OF-THE-ART 3D PRINTING LAB

Education Experience

REGISTRATION NOW OPEN!

About Aquarium of the Bay



SEA LION CENTER

Overlooking K-Dock in the marina adjacent to PIER 39, the Sea Lion Center interprets the colony of wild California sea lions now permanently established in this unusual urban location. The Center provides free educational programming on the natural history of California sea lions and the environmental threats they currently face.

1. Child viewing exhibits at the Sea Lion Center
2. Free presentation at the Sea Lion Center
3. Sea lion skeleton on display







SEA LION CENTER

SEA LIONS IN SAN FRANCISCO MAKES STEAM HISTORY

After an 18-month public presence on the Embarcadero, Union Square, Moscone Center and at PIER 39, California's largest public STEAM Program with 30 painted six-foot tall Sea Lion statues wrapped up this year. Photographed by thousands of visitors, the Sea Lions made their social media presence felt with selfies, funny postings, and environmental messaging around the world.

Launched last year before the pandemic shutdown, the Sea Lions in San Francisco initiative by the Aquarium was a culmination of a juried selection of 30 Bay Area artists, marking the 30th anniversary of their arrival on Pier 39 following the Loma Prieta earthquake. Mayor London Breed proclaimed January 16th, 2020 as Sea Lion Day in San Francisco!

Each Sea Lion statue carried a QR code with an artist's profile and the corresponding environmental message depicted on the statue. What made the project fun was thousands of school children from across state lines joining hands in painting thousands of mini sea lions in support of our mission of protecting and preserving the San Francisco Bay and its rich marine biodiversity. While Naturalists from the Aquarium offer free public engagement at the world-famous K-Dock where hundreds of noisy sea lions hang out, the Sea Lion Center located right above offers exciting and engaging programs for school children year-round.



AQUARIUM OF THE BAY





Sea lion statues on display across San Francisco



Photo credit: @outtt_n_abouttt

Sea lion statue artists at the Sea Lions in San Francisco media launch event, held in Chart House restaurant's Sea Lion Room, overlooking K-Dock at PIER 39, January 16, 2020.









PIER 39

AQUARIUM OF THE BAY

SAN FRANCISCO

BAY BRIDGE





THE BAY INSTITUTE

The Bay Institute (TBI) is the policy, research, and advocacy arm of Bay.org. TBI's scientists and policy experts work to protect the San Francisco Bay estuary's unique fish and wildlife species; restore the habitats and processes that support a healthy ecosystem; promote sustainable water and land management practices; and measure how well the ecosystem - and management efforts to protect it - is doing. To achieve these goals, TBI conducts technical analyses, engages in regulatory, legislative, and voluntary decision-making processes, and educates media, decision-makers, and the public on key issues.



San Joaquin River restoration

Construction of Friant Dam by the U.S. Bureau of Reclamation in the 1940s destroyed the state's largest Chinook salmon run. After helping negotiate (along with partner organizations) a historic 2006 agreement to restore flows and fisheries to the dewatered reaches of the river, TBI now works with the Restoration Administrator and Federal Restoration Program to implement the agreement. Year round flows and salmon reintroduction began in 2016. Three years later, salmon returned naturally to the river to spawn for the first time in over half a century. TBI is a technical advisor to the federal-state-water user collaborative science effort to improve conditions for smelt and other species. We are incredibly proud of the work TBI has done for these fish.

- Worked with the Restoration Administrator to schedule flow releases to preserve habitat quality and temperature benefits for salmon under challenging conditions – a critically dry year with less than 30% of average runoff – and to update the formal guidelines for flow scheduling.
- In a new report, TBI documented water quality conditions and the status of monitoring for water quality in the San Joaquin River Restoration Program ecosystem.
- Studied the effect on the restoration effort of excessive surface water and groundwater diversions in reaches of the river below Friant Dam.
- Produced a report detailing the status of flow gauging in the San Joaquin River Restoration Program area that served as the basis for the Bureau of Reclamation's Flow Monitoring and Management Plan.
- In order to protect fish and flow conditions, protested (with the Natural Resources Defense Council) applications for new water rights on San Joaquin River flood bypasses.

Protection for endangered species and ecosystems

Existing state and federal regulations to protect endangered or rare Bay-Delta aquatic species and the habitats and processes they depend on to survive and flourish are clearly in need of updating. Many native fish populations have declined to record or near-record low levels in recent years. TBI continues to play a leadership role in defending and improving management actions for native species like Chinook Salmon and Delta Smelt. TBI's technical analyses provide the scientific basis for large-scale improvements in flow and habitat conditions to support endangered species and ecosystems. TBI also works to secure regulatory and management changes to achieve those needed improvement and to oppose water development projects and water management policies that would further undermine environmental conditions.

- Opposed the U.S. Bureau of Reclamation's proposed operation of Shasta Dam on the Sacramento River during this critically dry water year because of concerns about how operations would degrade temperature conditions for endangered Chinook salmon and other species. 2014-2015 Shasta operations devastated those winter and spring-run salmon year classes. TBI analyzed Reclamation's proposed operations and provided expert testimony and supporting materials to the State Water Resources Control Board regarding the effects of those operations on the ecosystem.
- Completed Phase 1 – a series of expert workshops to define targets for abundance, diversity, productivity and spatial distribution of salmonids – for our Salmonid Recovery Project. This is a collaboration with government agencies, water users, and other stakeholders to prioritize actions to restore healthy salmon and steelhead populations in the Central Valley.
- Continued long-term technical efforts to study the role of the freshwater plume from San Francisco Bay on coastal fish and wildlife, and to identify and evaluate new management actions to reverse the decline of Delta smelt, a once abundant forage fish that is now the rarest species in the estuary.

1. San Francisco Bay Delta Estuary
2. California Brown Pelican (endangered)
3. San Francisco Bay, Satellite View
4. Delta Smelt (endangered)
5. Commercial fishing boat in San Francisco Bay
6. Chinook salmon (endangered)





Agricultural water pollution

Agricultural runoff is the single largest source of contaminants for aquatic ecosystems in the United States. The problem is particularly acute in the San Joaquin Valley, where irrigation of semi-desert soils leaches salts and toxic trace elements like selenium into shallow groundwater and surface waters, causing fish and bird deformities and deaths. Over the long-term, polluted runoff also threatens drinking water quality and agricultural productivity. TBI has successfully worked over the years to close toxic agricultural runoff ponds, stop completion of a master drain from toxic lands to the estuary, and eliminate selenium-tainted discharges to the San Joaquin River.

- Made the case, based on the best available science, that the San Francisco Bay and Central Valley Regional Water Quality Control Boards should adopt new, more protective selenium standards – 3 parts per billion (ppb) for rivers, 1.5 ppb for freshwater wetlands and sloughs, and 0.2 ppb for estuarine waters – instead of the current, inadequate 5 ppb standard.
- Worked with agricultural dischargers to ensure that the voluntary 2 ppb selenium target – stronger than the current 5 ppb standard – was met in the San Joaquin River.
- Worked with urban water districts to prevent weakening of salt discharge requirements.



The Bay Institute publications

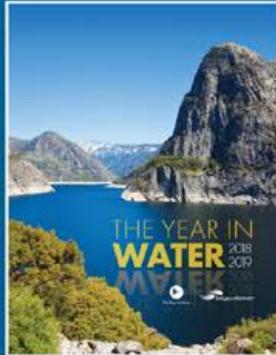
TBI's publication history includes many pioneering works, including the first comprehensive ecological history of the Bay-Delta estuary-watershed and the first ecological scorecard for the estuary.

- Began work on "The Atlas of Water Use and Water Equity," scheduled for publication next year. It will graphically illustrate how water is used in California, who uses it, and who the winners and losers are.

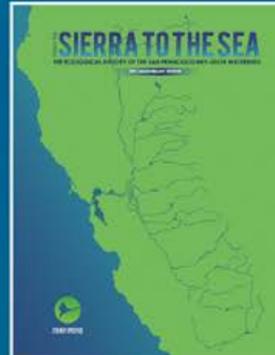


1. Agricultural runoff
2. Selenium-induced waterbird embryo deformity
3. Black-necked Stilt

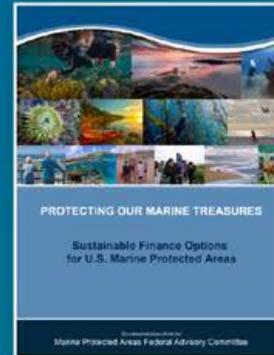
THE BAY INSTITUTE PUBLICATIONS



The Year in Water
2018 & 2019



From the Sierra to the Sea
20th Anniversary Edition



Protecting Our
Marine Treasures
2017



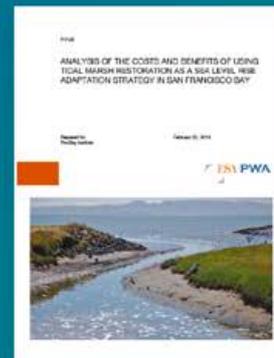
Golden State Waters
2016



Horizontal Levee:
The Oro Loma Project
2016



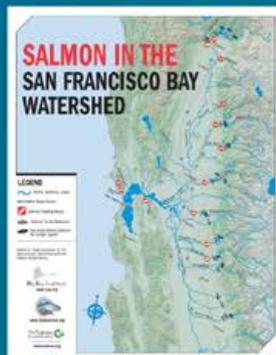
San Francisco Bay
Freshwater-Starved Estuary
2016



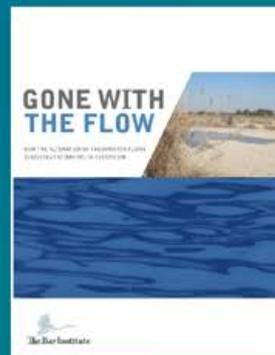
Horizontal Levee
Cost & Benefits
2013



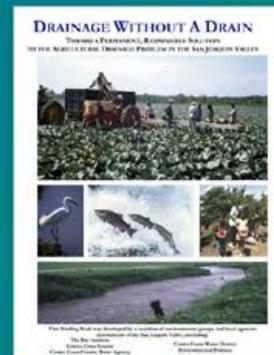
Collateral Damage
2012



Salmon Viewing Map



Gone With the Flow
2010



Drainage without a Drain
2003



SCAN TO VIEW
PUBLICATIONS

40 YEARS

of ENVIRONMENTAL ADVOCACY

THE BAY INSTITUTE

1981

The Bay Institute (TBI) was founded.

1984

- 1989

Through a combination of public advocacy and annual scientific conferences, TBI works to understand and publicize the tragedy of dead and deformed wildlife at Kesterson from selenium-tainted drain-water.

1986

- 1988

TBI makes the "case for the Bay" in state proceedings to set new water quality standards.

1987

TBI's "Citizens' Report on the Diked Historic Baylands of San Francisco Bay" catalogues the Bay's remaining wetlands for future protection.

1992

Coalition led by TBI and Save the Bay secures passage of federal water reform bill (Central Valley Project Improvement Act).

1994

After forcing the Environmental Protection Agency to disapprove inadequate state standards, TBI and partners negotiate Bay-Delta Accord to establish stronger water quality standards for the estuary.

1996

- 1997

TBI's efforts to prevent agricultural water pollution in the San Joaquin Valley result in thousands of acres of toxic evaporation ponds being closed or modified and in agreements to eliminate toxic farm runoff over the long term.

1998

TBI publishes "*From the Sierra to the Sea: The Ecological History of the San Francisco Bay-Delta Watershed*," the first and only comprehensive analysis of the entire estuary and its watershed.



STRAW (Students and Teachers Restoring a Watershed), TBI's environmental education project, is launched, eventually completing over 100,000 linear feet of stream restoration.



2003

TBI issues first ever Ecological Scorecard for San Francisco Bay estuary

2004
- 2005

Wetland victories include helping preserve 1,769 acre Tolay Lake Ranch and prevent development of an additional 1,800 acre site in the North Bay

2005 landmark agreement is reached to improve flows and habitat on the Yuba River, home to the state's healthiest remaining salmon run.

2006

Historic settlement is reached to restore flows and fisheries to the dewatered San Joaquin River.

2008
- 2009

After TBI and its allies successfully challenge inadequate Endangered Species Act protections for endangered delta smelt and Chinook salmon, the federal government issues new, stronger requirements for both species.

2013

TBI issues "Horizontal Levee" report on using Bay marshes to control storm surges, catalyzing construction of the Ora Loma horizontal levee, completed in 2019.

2016

TBI convenes Golden State Waters Summit, resulting in action plan to protect nearshore coastal waters from marine debris, overfishing, acidification and other threats.

2018

TBI-led coalition wins first major improvement of Bay-Delta water quality standards in over 20 years

2019

As result of 2006 settlement, spring-run Chinook salmon return to the mainstem San Joaquin River to spawn for the first time since the 1940s.

2020

As result of 1997 agreement, zero discharge of westside agricultural discharge to the San Joaquin River is achieved.

2021

TBI and a broad coalition of interest groups initiate a multi-year project to define and achieve recovery of all salmon and steelhead populations in the Central Valley.



BAY MODEL ALLIANCE

One of bay.org's divisions, The Bay Model Alliance, is comprised of The Bay Model and the Bay Model Visitor Center. Together, the two form a research and education facility built by the U.S. Army Corps of Engineers. Inside is one of the most fascinating scientific tools in the world: a working hydraulic model of San Francisco Bay and the Sacramento-San Joaquin River Delta systems that simulates tides, currents, and sediment movement the Bay Model is used by scientists and engineers.

What makes the model special is that its pipes and hydraulics make it a real simulation of the water environment of San Francisco Bay and the Delta. The analog model is used to simulate the effects of everything from oil spills, upstream dams, and water diversions to floods caused by global warming. The Bay Model Visitor Center provides a variety of public events and educational programs each month.



The location provides a stunning venue for special events and presentations. Tours are available for groups with advanced reservations and can be tailored to the technical sophistication of the group. The Corps of Engineers also makes the Visitor Center available to scientific and educational groups for meetings and seminars. As part of the alliance, bay.org assists in retail and merchandise.



1. The Bay Model in Sausalito
2. Scale model of Golden Gate Bridge
3. Child exploring The Bay Model
4. Guests gather around the working hydraulic model at The Bay Model
5. Lt. Col. Kevin P. Arnett and George Jacob, President and CEO of BayEcotarium, at the Sylvia Earle National Geographic book launch at the Bay Model in Sausalito
6. The Bay Model working hydraulic model of San Francisco Bay and the Sacramento-San Joaquin River delta systems





BAY ACADEMY



Bay Academy continued to outreach and educate in several ways in 2021, both virtually and in-person. Virtual tours saw large success and developed into opportunities for corporate team building events, birthday parties, public behind-the-scenes tours, and other custom preferences! In February, the annual Aquarium celebration of Black History Month, called Sankofa Days at the Bay, was changed from an in-person event at the Aquarium to a virtual tour. Special thanks to NorcalMLK Foundation and SF Links for partnering with us for that event.

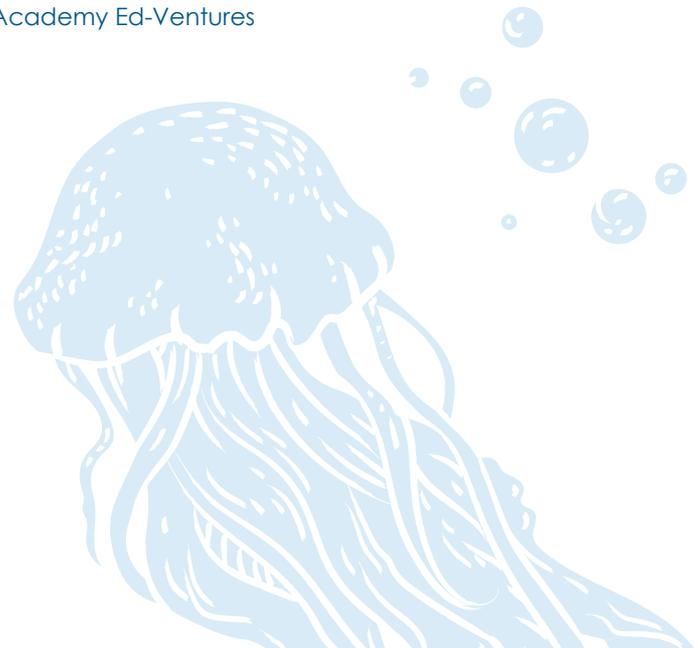
In-person outreach took the form of citizen-science diving programs with Monterey Bay Scuba in Breakwater Cove, Monterey. Participants had the chance to sign up for 3 individual specialty certifications recognized by PADI including peak performance buoyancy, underwater digital photography, and fish ID. Divers were able to complete all 3 specialty certifications in 2 days down in Monterey, CA.

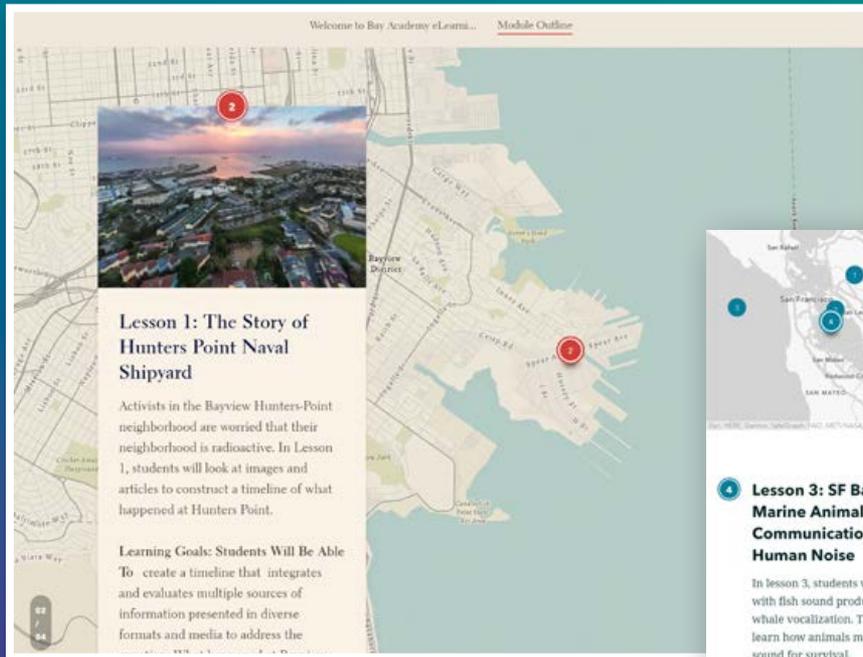


Bay Academy Ed-Ventures

A new program called Bay Academy Ed-Ventures was also created thanks to SOFAR Ocean. With a donation of a SOFAR ROV we were able to live-broadcast exploration dives with the ROV in the Monterey Bay, which also included an educator/naturalist to guide students and classrooms on what they were seeing!

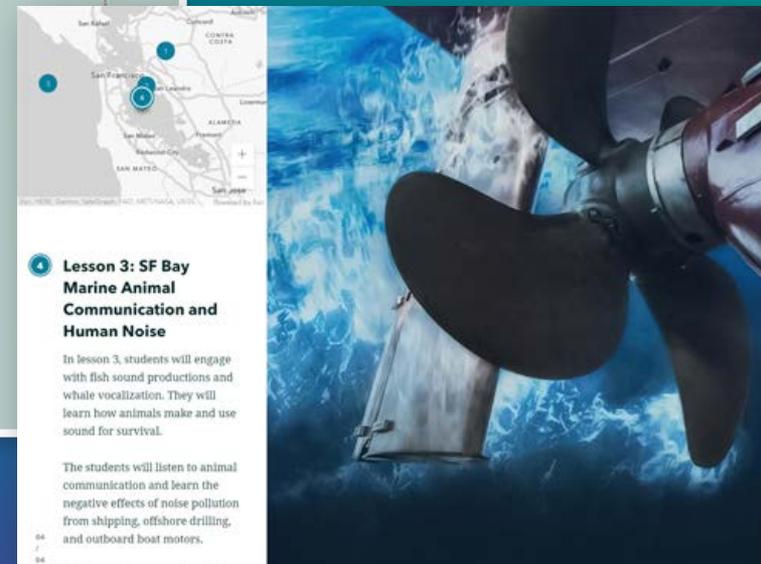
1. Diving for Citizen Scientists Course students
2. Hunter Coughlin, Studio Aqua Multimedia & Promotions Manager, sets up the ROV on shore as part of Ed-Ventures
3. Promotional graphic for Bay Academy Ed-Ventures





◀ Snapshot of Environmental Justice e-Learning Module

▶ Snapshot of Bioacoustics e-Learning Module



CLIC Program

The CLIC (Climate Leadership Innovation Certificate) Initiative is a week-long professional certification that will be administered by professionals and knowledge experts in locations around the world experiencing environmental distress. The program case references site specific action, where policy interventions and appropriate technologies are being applied. CLIC encourages fostering environmental leadership from underserved communities and the developing world with thoughtful leadership on key emerging topics that will shape our collective future. It will convene regional and global forums and serve as a platform for leaders across the globe to engage with peers and subject matter experts on key strategic issues related to oceans such as energy, environment, food, health, disaster resilience, security, prosperity, and governance. Through strategic foresight and macro-level water analysis as a common denominator of environmental stewardship, leaders will learn practical, innovative courses of action for change.

e-Learning Modules

We also created 2 brand new e-Learning Modules to educate about Bioacoustics in the San Francisco Bay, and Environmental Justice & Injustice in Bayview Hunters Point in San Francisco.



We launched EcoXpeditions in 2021 as a dedicated new branch of BayEcoTarium with upcoming marine conservation field trips worldwide to bring guests up close and personal to hands-on climate conservation work and marine life education.

Student Hawaii EcoXpedition

Summer is an excellent time to reach out to students for these once-in-a-lifetime experiences. They'll be learning about marine protected areas, participating in coral restoration, observing strategies for adaptation to climate change, conducting underwater marine assessments, and engaging with the local community and culture.

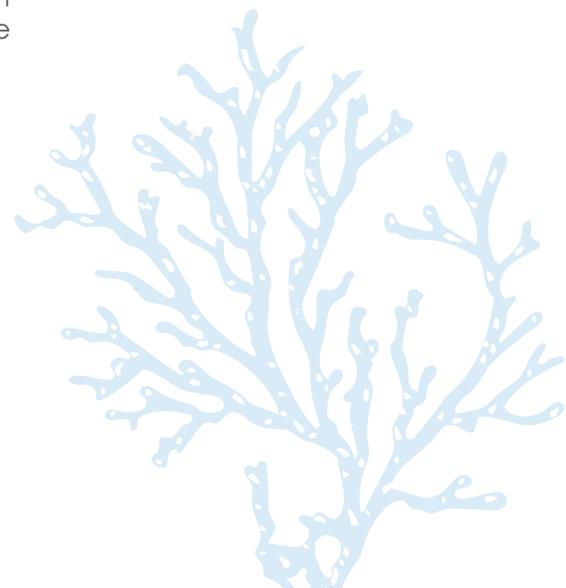
That happened this year, as 10 teen students from the Atlanta area, accompanied by 9 parents, arrived on Oahu to become PADI certified, focus on the Oahu Marine Protected Area, and assist with coral restoration during their 6-night and 7-day EcoXpeditions ocean adventure.

Highlights of the Hawaii experience included coral and fish ID dives, learning and volunteering with the community on sustainable and traditional aquaculture

at the Loko Pa'aiau Fishpond, working with the local community on traditional Hawaiian agriculture, and diving in the fields to help restore a loi at the Papahana Kuaola and Kakoo Oiwi, and much more.

Land adventures included a rainforest hike to Manoa Falls and a visit to Pearl Harbor. There, the group was given a presentation by educator and climate activist Kyle Kajihiro for a unique overview and history of this historic place. A special Hula presentation from a local Halau graced the traditional Luau. Our Hawaii EcoXpeditions garnered nearly \$80,000 in revenue.

1. Students diving on EcoXpedition in O'ahu, Hawaii
2. School of Bluestripe Snappers in O'ahu
3. Students from Frank Ski Foundation finishing their dive certifications in O'ahu, Hawaii





eco  peditions

EXPL●RE

ENGAGE

EXPERIENCE

SCAN NOW



aquariumofthebay.org/xpeditions

COME EXPLORE THE
OCEANS WITH US!



Participants snorkeling on EcoXpeditions. Snorkeling is just a small part of what EcoXpeditions has to offer across all of their different excursion activities.







5.

Baja Mexico 2021

A second EcoXpedition in 2021 took place from November 29th to December 5th in Baja, Mexico. Activities included scuba and snorkeling with whale sharks, giant rays and sea lions, tree reforestation, scuba diving at Cerralvo Island, and more. Mexican cooking classes and dancing rounded out the hands-on and engaging experiences with the culture and the community at La Ventana.

The trip was curated in only two short weeks and generated \$12,000 in revenue. One of the participants called his EcoXpedition to Baja "the best trip of his life, ever."

1. Ready for more dives!
2. David Jackson: "best trip in 22 years!"
3. Aquarium of the Bay Hunter Coughlin with Alexis our guide at our Whale Shark encounter
4. Bay of La Paz, Whale Shark Sanctuary
5. Ralph Mench from Hawaii, swimming alongside a Whale Shark



1.



2.



3.

4.





6. EcoXpeditions group at Palapas Ventana Resort with Carlos Sanchez, marine education speaker
7. Evening lecture on Whale Sharks and Manta Rays
8. JJ sends out a Hawaiian "Shacka" sign that she saw her first whale shark
9. Pablo Aguja, whale shark conservationist, and Angelina Preza, EcoXpeditions on the Whale Shark boat, La Paz
10. EcoXpeditions, including JJ Moon, participant, Tim Hatler – owner of Palapas Ventana and Angelina Preza, assisting Fundacion Azul Cerralvo, which supports disabled children in La Ventana community, plant Neem trees in the park alongside the children



EXCITING AND MEANINGFUL GLOBAL ECOEXPEDITIONS SCHEDULED FOR 2022

BAJA, MEXICO: February 6-12, 2022

- Education and workshop on humpback whales
- Ocean visit to see the humpback whale babies with their mothers
- Scuba dive and snorkel with manta rays
- Visit ancient caves with petroglyphs
- Visit freshwater waterfalls and soaking in hot pools
- Tree reforestation with local community

MAUI, HAWAII: February 21-27, 2022

- Education and workshop on plastics in the ocean and beaches
- Snorkel and scuba dive at Molokini Island and Black Rock
- Educational talk and visit to Maui Ocean Center – the Aquarium of Hawaii
- See sea turtles and humpback whales, Hawaiian arts and dance

HAVANA, CUBA: March 6-12, 2022

- Training workshop on invasive species and removal with marine biologist
- Walking tour of Havana, an UNESCO World Heritage Site
- Playa Larga National Park excursion of various coastal marine ecosystems, including mangrove forests
- Meet with Cuban marine conservationists on marine protection

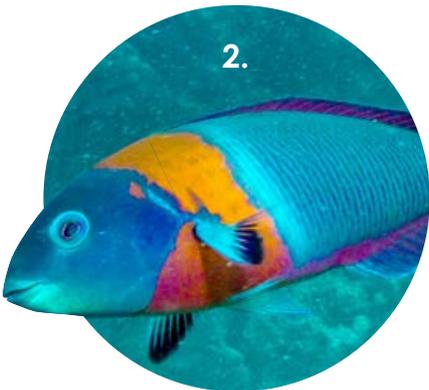
LESVOS, GREECE: March 20-26, 2022

- Visit Mission Blue's newest hope spot – the Aviaki hope spot off of Lesvos Island
- Snorkel and scuba dive at Petra and Mirmigi Reef
- Meet with Starfish Foundation
- Visit to Mytilene Castle and Museum
- Excursion for birdwatching
- Hike in the wetland of Kalloni, home to 100 bird species
- Ouzo and olive oil tasting with the local community

1. Sea turtle in Hawaii

2. Parrotfish

3. Moray eel



BAJA, MEXICO: March 29-April 4, 2022

- Educational talk and workshops on humpback whales and whale sharks
- Day trip to La Paz to snorkel and swim with the whale sharks
- Scuba dive and snorkel with sea lions on La Reina Island
- Tree planting and reforestation efforts with local community
- Local Mexican folkloric dancing with students
- Day trips to Cerralvo Island, also known as Jacques Cousteau Island for scuba diving, snorkeling and swimming

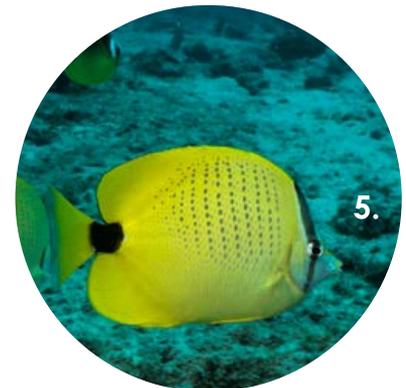


O'AHU, HAWAII: April 3-9, 2022

- Coral restoration and coral reef survey dives
- Visit to marine-protected areas
- Cultural and community field work with Taro and agricultural fields
- Native fish ponds and watershed conservation

BELIZE: May 15-21, 2022

- Education and diving at Belize's largest marine-protected area, Turneffe Atoll
- Dives at one of the Caribbean's largest underwater wrecks, along with West Wall dives
- Land adventures - cave tubing and ziplining
- Visit to Belize Wildlife Sanctuary and Zoo and its rehabilitation programs



BAJA, MEXICO: June 1-8, 2022

- Educational talks and workshops on humpback whales and whale sharks
- Day trip to La Paz to snorkel and swim with the whale sharks
- Scuba dive and snorkel with sea lions on La Reina Island
- Tree planting and reforestation efforts with local community
- Local Mexican folkloric dancing with students
- Day trips to Cerralvo Island, also known as Jacques Cousteau Island for scuba diving, snorkeling and swimming

COSTA RICA, GOLFO PAPAGAYO: June 12-19, 2022

- Horseback ride and hiking in the lush biodiversity of Arenal Volcano National Park
- Shark and ray identification and training workshop
- Marine conservation and underwater monitoring
- Field tagging sharks in Papagayo Gulf
- Land adventures including soaking in geothermal pools



4. O'ahu, Hawaii
5. Angelfish
6. Coral surveys in O'ahu



COSTA RICA, GOLFO DULCE: June 22-July 1, 2022

- Workshop and training on biology and conservation of sharks
- Hammerhead shark tagging
- Exploration of different coastal marine ecosystems including wetlands, and coral nurseries
- Shark and ray identification and counts

BIG ISLAND, HAWAII: July 7-14, 2022

- Blackwater scuba diving off of Kailua Kona
- Snorkel and scuba diving with manta rays at Kailua Kona
- Visit to Seahorse farm
- Visit to world-famous Kona coffee farms
- Education and workshops on sustainable ocean farming



FLORIDA KEYS, MIAMI, FLORIDA: July 24-30, 2022

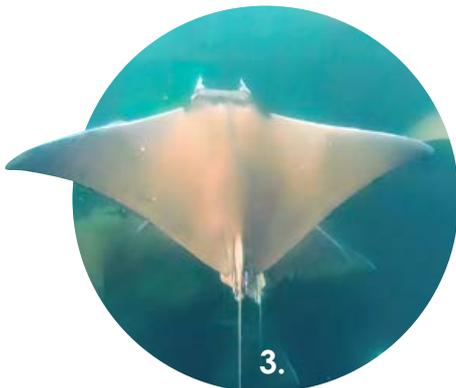
- Sea urchin education and collection of invasive species
- Visit to Frost Science for behind-the-scenes tour
- Marine conservation presentation
- Visit Mote in the Keys for coral conservation work
- Muve shoreline restoration
- Education session on South Florida environmental conservation efforts

O'AHU, HAWAII: August 8-15, 2022

- Coral restoration and coral reef survey dives
- Marine protected areas
- Cultural and community field work with Taro and agricultural fields
- Native fish ponds and watershed conservation

LESVOS, GREECE: September 26-October 2, 2022

- Visit Mission Blue's Newest Hope Spot – the Aviaki Hope Spot off of Lesbos Island
- Dives at Mirmigi Reef and Petra
- Meet with Starfish Foundation
- Visit to Mytilene Castle and Museum
- Excursion for birdwatching and hiking in wetland of Kalloni, home to 100 bird species
- Ouzo and olive oil tasting



1. Snorkel with Sea of Cortez Protected Sea Turtles near La Ventana

2. EcoXpeditions partner, Aquatic Life Divers, in Kailua-Kona, Hawaii

3. Snorkeling with Manta Rays gliding through clear waters of Sea of Cortez



Snorkeling with
Whale Sharks



Hawaii cultural
site in O'ahu

BAJA, MEXICO: November 1-7, 2022

- Presentation on whale migration
- Scuba and snorkel with whale sharks and grey sharks
- Swim with giant rays and sea lions
- Land community efforts in reforestation with locals
- Protecting turtle nesting on beaches of Sea of Cortez
- Visit to Cerralvo Island (also known as Jacques Cousteau Island as he visited here so often)
- Swim through superhighway of fish as they migrate south

MAUI, HAWAII: November 14-20, 2022

- Education and workshop on plastics in the ocean and beaches
- Snorkel and scuba dive at Molokini Island and Black Rock
- Educational talk and visit to Maui Ocean Center – the Aquarium of Hawaii
- See sea turtles and humpback whales
- Hawaiian arts and dance

ECOXPEDITIONS BAJA MEXICO PROGRAM 2022:

A new and equally important component of EcoXpeditions is the utilization of the Baja Mexico marine-protected areas for shorter 3-night, 4-day ocean conservation adventure tours as opposed to the current 6-night, 7-day tours. These shorter trips are designed to embrace a larger part of the population, with EcoXpeditions Baja Mexico program starting in February 2022 and running monthly for most of 2022. This will provide for a new and steady revenue stream and will reach out to a wider audience for ocean education and experiences. Another benefit to the shorter excursions is that they are easily promoted through online travel agencies for a wider reach.

1. EcoXpeditions recent trip to Baja Mexico – local team at Palapas Ventana Resort loved wearing our t-shirts!
2. Another glorious sunset overlooking the thatched roof Casitas at Palapas Ventana Resort in Baja Mexico
3. Come and swim with the sea lions at La Reina island at Sea of Cortez, a Marine Protected Area





The background is a solid teal color. On the left side, there are several stylized green leaves of various shades, some overlapping each other. The leaves have simple, rounded shapes and some have small white spots or veins. The overall style is clean and modern.

APPENDIX A

2021 DONORS AND MEMBERS

2021 DONORS

OVER \$25,000

Fidelity Charitable Gift Fund

Clearinghouse CDFI

San Francisco Public Utilities Commission (SFPUC)

Jack Edward Lindstrom

Eliza Brown (MBS Fund)

\$10,000 – \$24,999

Anthropocene Institute

James Anderson Living Trust c/o Ohana Advisors

Jill Spangenberg and Jerome Barakos

G. Terry Gausey

Jack Lindstrom (Benevity)

\$5,000 – \$9,999

Barbara Newton

Daniel M. Gonzalez

Harrison C. Dunning

Sausalito Art Festival Foundation

Sima and Pravin Patel

Visit California

\$2,500 – \$4,999

The San Francisco Foundation

Asha Jadeja

Nina Brown de Clercq (MBS Cockayne Fund)

\$1,000 – \$2,499

Jim Anderson

Kim Everist

Trammell Crow

Benevity

Albert Gomez

Ben Bleiman

Dean A. and Lilla Morehous

John Lavine

Madhavan Rangaswami

Steven N. and Susan Machtinger

Terry and Douglas Young

Art Whitney

Becky Barnier

Paul Auerbach

Phyllis and Patrick Gallagher

Sukesh Mohan

Susan Stoddard

Baszucki Gift Fund (Bessemer Giving Fund)

Patricia Dinner (Swing Foundation)

Moor+South/PIER Management Co. L.P.

\$250 – \$999

Chris Gallagher

Tom Biglione

Charlotte Vick

Hal Candee and Eliza Brown

Karthik Chandrakanth

Margaret Mitchell

Maria Padilla

Alan Dones

Alex Barnard

Darlene Chiu Bryant

Floyd Kameda

Hildy Shandell

John C. and Susan Racanelli

John Kevlin

Mary Crowley

Michelle Finn

Steven Woodside

Ted van der Linden

Anonymous

\$249 AND BELOW

Cat Tolentino and Reggie Regino

Fred Colman

John Cain

Marilyn Hannes

Ripan Nagpal

Shruti Ghandi

Norma L Jellison

Elizabeth Kolinski

Jean Hurley-Gardner

AmazonSmile Foundation

Becky Kolinsky

Evelyn Tipton

Gary Dunn

Laura and Richard Carson

Ravi Ram

Robynne Winchester

Tom Kiely

Sivan Tarle

Steven Hibshman

Zachary Stevens

United Way of the Wine Country

Kevin Cooper

Aldo Martinez

Annabelle Quan

Ashley Griffin

Blue & Gold Fleet

Network for Good

Tera Allegri

Braxton Cahill

Ruth M Rosenblatt

Heather Jackson (Benevity)

Wendy Kan (Benevity)

2021 NEW MEMBERS

Sokib Abdulkhmidov

Susan Abe

Aiman Abedi

Agnieszka Adams

Ebony Onoh Adeji

Lola Adeyemi

Sergio Ivan Aguayo

Maria Aguirre

Imran Akhter

Ann Ponla Albinto-Aruceno

Aliece A. Alessandra

Rachel Rebecca Alexandre

Rosanna Alfaro

Varun Allampalli

Ayanna Allen

Katie Allen

Myla Cruz Alqueza

Juan Jose Alvarado

Janet Alvarez

Koffi Regis Amehoum

Koffi Regis Amehoum

Gladys Amezola

Mohammad Jawid Amiri

Gillian Gail Andes

Victoria Angel

Amber Appel

Gabby Aragon

Thais Arai

Arcilla

Yolanda Arechiga

Ricardo Arguello Garrido

Akiko Rain Ascencio

Sahar Assaf

Saul Avalos Serrano

Jason Matthew Avila

Pamela Alejandra Ayala

Yama Ayobi

Fazilah Azmi

Alexandria Babington

Abdul Bahramand

Sumatinee Baibua

Maria Barajas Amaral

Mark Barker

Wilson Barreno

Diana Barron

Aramon Bartholomew

Melissa Bartlett

Terrill Barze

Vlad Bayyard

Aviad Behar

Genevieve Meyers Beig

Nandish Benchalli

Diana Yasel Beniyah

Aditya Bhalla

Moshin Mehandi
Bhanwadia

Frank Bidwell

Elena Biggs

Annette Fuh Bih

Jessica Blume

Somayeh Bolourchi

Kristina Denee Booker

Angela Michelle Boone

Genna Bourquin

Nora Bowers

Wendy Bradley

Cindy Bravo

Erin Bream

Dena Brewster

Sharon Briggs

Cora J.A. Broughthon

Nicholas Brown

Shaun Bruckner

Brock Brynjulson

Jason Buckner

Dayne Buddo

Carmen Buffington

Joseph Bui

Caren Chase
Coffin Buscovich

Ashley Nichole Bush

Connie Lee Bussell

Michelle Butler

Jessica Bylo Chacon

Ariana Sanchez Caldera

Shani Caldwell

Mark Candalla

Amanda Candelaria

James Candler

Suzanna Maria Cano

Ferdinand Canon

Maria Cantera

Guadalupe Cardenas

Emily Carey

Shannon Carlson

Deborah Carlson

Rosalie Carollo

Sandra Leticha Carranza

Juliana Lizeť Casanova

Patricia Castillo

Vincent Castro

Alejandra Castro-Aguniga

Jennifer I. Catolico

Olivier Ceberio

Michael Cella

Irene Cervantes

Reginald Chamberlain

Lena Luong Chan

Shihuan Chang

Eliezer chaparro	Valerie Coffman	Claudia Melara Deley	Alberto Elizalde
Cynthia Anne Chappell	Susie Coleman	Sarena Delgado	Jamie Marie Ellison
Jesus Chavez	Samuel Collazo	Melissa Renee Delgado	Iris Elton
Azenith Ariate Chavez	Jesus Everardo Contreras	Nuvia Demers	Wendy Emery
Luis Gilberto Chavez	Lysa Cooper	James Denison	Arthur Eng
Ethan Erik Cheever	Meredith Corin-Bright	Sarah Detmering	Rebecca Enriquez
Ping Chen	Cesar Corona	Lauren DeWees	Kenny Abmiael Escobar
Alexander Cheng	Fernando Luis Costa	Tanveer Dhaliwal	Jacqueline Esera
Wei-chung Cheng	Carolyn Cotterman	Sourabh Dhawan	Sandra Marie Espinoza
Vamsidhar Chennagouuni	Magdiel Couto Fajardo	Manpreet Singh Dhillon	Rosie Faifua-Cortez
Wen Cheuk	Leeann Crisman	Elizabeth Diaz	Numondzhon Faizullaev
Phanny Chhin	Diana Adamos Cruz	Claire Diddle	St. Joseph's Family Center
Ting Hsuan Chiang	Vicente Cruz	Alana Dieter	Compass Family Shelter
Elaine Chin	Robert A Cruz	Lisa Dillon	Yigang Fang
Stephanie Chiu	Chance Lawrence Culley	Arsenio Dimanlig	Declan John Farrell
Kenneth Chiu	Alda Galapin Curaming	Katherine Djavakhyan	Norma Farrow
Tiffany Chiu	Cynthia Cory Daniels	Stephanie Djidjev	Yolanda Favaloro
Sara Chiu	Tatiana Daulton	Maria Dominguez	Emily Feldmann
Chung Koon Choi	Nadine Davila	Marina Dreyfuss	Alejandra Figueroa
Ruchi Chopra	Alfonso Antonio Davila Vera	Jennie Duffy	Alfredo Figueroa Jr.
Aaron Chrisco	Jessica Davis	Carl Hawking Duke	John Russel Filstrup
Janelle Andrea Chun	William Dawley	Elliott Dupree	Jessalyn Fitzgerald
Linda Joy Chungchootairong	Jacqueline Deborja	Laura Durst	Sesilia Halani Flores
Taj David Cirillo	Paul DeLeon	Nathan Dushman	Eric Foerg
Byron Claiborne	Tina Tran DeVera	Debra Lynn Edinger	Peter Fong
Compass Clara House	Alysha Shamina Dean	Dominador Eduardo	Carlos Foundora
William Leonard Clauson	Alexander Vincenzo DelFavero	Jamie Egan	Elizabethe E Franco

2021 NEW MEMBERS

Aileen Jeanette Frankel	Magdalena Gomez	Jonathon Hagwood	Nicole Amoreena Holland
Shakira Alliana Friez	Justin Gomez-Stafford	Muzaffar Halkuziev	Daniel Ross Holland
Thea Frontino	Karla Gonzalez	Helena Price Hambrecht	Aet Hooper
Jattyonna Frost	Amanda Gonzales	Ali Omar Hamed	Jacob Michael Horlacher
Vida Gailiunaite	Mark Gonzales	Heidi Jinky Hane	Raphael House
Leanna Galang	Jazmyne Gonzalez	Harinder Hansrai	Shari M Hovan
Sharon Galat	Eyra Gonzalez	Geoff Hart-Cooper	Dillon Michael Hovda
Tamara Galeano-Capone	Juan Francisco Gonzalez	Sandy Hartley	Margaret Hsu
Maria Gallegos	Vianey Gonzalezrueda	Cheyenne Hawken	Yujie Hu
Keirsten Garcia	Artem Good	Jamila HaynesMejia	Justin Huang
Elizabeth Garcia	Julie Goudreau	Marc Hellerstein	Hui Juan Huang
Mayra Garcia	Krystal Gracier	Tanera Hemmingway	Ping Yu Huang
Michael Garcia	Catherine Greely	Fiona Henderson	Samantha Li Huang-Frost
Sheida Gasparian	Holly Grey	Brittany Henneman	Allison Hubbard
Fidel Gebremicael	Tyree Griffin	JohnEric Henry	Daniel Hughes
Benjamin Gerry	Johanna Noel Grimes	Ana Hernandez	Shane Hulse
Leilani Gerszewski	Lesley Grossblatt	Dolores Hernandez	Danxia Hunang
Raouf Ghanem	Victoria Anelina Guerrero	Javier Francisco Hernandez Santiago	Tzu Ting Hung
Biziti Ghebreab	Bernadette Guerrero	Rosa Maria Hernandez Vega	Ali Hussain
Christi Ginger	Heidi Elizabeth Guertin	Kandus Jeannette Herod	Tin Tri Huynh
Diana Giove	Hector Alejandro Gurrola	Sarah Hewitt	Jeyoung Hwang
Brittney Gipson	Jaime Gusimat	Penny Higashi	Jamie Inase
Agathon Girgis	Abdi Ali Habad	Laurie Hill	Supriya Iyer
Kristen Jenifer Godinho	Bianca Haberek	Willie Michael Hinton	Takiyah Nell Jackson
Samuel Goldberg	Jordan Haberle		Erica Jacobs

Chanell Jarvis	Ratmir Khamokov	Rustrian Laura	Sharon Lim
Tashawnah Javius	Owais Majid Khan	Sage Lawrence	Feng Yang Lin
Aishwarya Jayaraman	Kamal Khan	Carl Lee	Yang Liu
Sabine Jiao	Samrah Ahmed Khan	Jae Hoon Lee	Kristina Liu
Grace Jimenez	Danbee Kim	Akiyo Tomonaga Lee	Jun Liu
Dakota Jimenez	Jihyun Kim	Won Ho Lee	Linlin Liu
Juan Jimenez Lucas	Robert King	Jonnette Yvonne Lee	Ray Anthony Llacuna
Katherine Johnson	Magdalena Kleuser Heinrich	Ben Lee	Gary Robert Llewellyn
Stacy Johnson	Reiko Kondo	Anna Lee	Patricia Llopez
Sara Marie Johnson	Svetlana Korzun	Irene Lee	Jer Mary Lo
Asia Nicole Jordan	Sonia Zaldana Kozanian	Susan Lee-Tran	Domingga Logan
Evan Harrison Jordan	Hanna Krasko	Charlotte LeFort	Brittani Long
Gerardo Juarez Sanchez	Ivan Kreger	Kaitlyn Mary Lehrer	Daisy Lopez
Lindsey Kadchhud	Sudhakar Krishnan	Aaron Leidl	Brayan Lopez
Wendy Kan	Mepi Kurian	Alba Leiva	James Lopez Kelly
Anna Kanarska	Gaurav Kwatra	Daniel Leon	Wowjari Lothaisong
Maryam Karampour	Yesenia Lacayo	Melina Leon Casasola	Sharon Louisell
Lovleen Kaur	Karla Lacayo	Svetlava Lepaeva	Georgelene Louis-Jean
Taranjit S Kaur	Jonathan Lai	Jill Levans	Daniel Loum
Ercan Kaynakca	Hoi Pui Lam	Kok-Keong Lew	Camillo Love
Tanya Lynn Kelleher	Lidia Larios	Laniana Lewaseni	Carla Lozano
Levi Keller	Charlotte Last	Karen Lewis	Bryan Daniel Luna
Susan Keller	Cheryl Anne Latorre	Charles Lewis	Eva Lustre
Adnan Khalidi	Stephanie Lau	Mitchell Lewis	Desiree Monique Maans
Haytham Mohamed Khalil	Alexa Renee Lauinger	Mei Li	Edgar Macias

2021 NEW MEMBERS

Jacklyn Mack	Colette Martin	David Mello	Pearl Ng
Pooja Madaan	Guadalupe Martinez	Gennybern Membreve	My Nguyen
Jonathan Maddox	Barbara Martinez	Audrey Deeann Menconi	David Nguyen
Homar Magallon	Monica Martinez	Carlhos Mendoza	Linhvan Nguyen
Subina K Mahal	Jason Martos	Joy Meng	Huong Nguyen
Cris Maldonado	Adam Mason	Claire Meredith	Justine Michelle Nguyen
Dominic Maleknia	Michelle Mastin	Kenneth Joe Miller Jr.	Elliot Nguyen
Dinesh Malkani	Amitabh Mathur	Sohum Misra	Marilyn Nichols
Kalyan Mallareddy	Braden Matthews	Leslie Miyamoto	Casey Nichols
Lisa Maloney	Phil Matticola	JAVIER Molina Castillo	Imtiaz Nizam
Angelica Malvar	Nasima Mayer	Kalena Ann Montanez	Briana Norton
Hareesh Manchala	Kevin McCary	Andrea Monticalvo	Stephanie Nunez
Kim Mangaban	Elizabeth McCarthy	Raquel Tania Morris	Theresa O'Connor
Rica Manlangit	Tobin McDaniel	Desiree Motamedi	Anita Obando
Guy Mannick	Ericka McDonald	Gary Mueller	Mehmet Oguz
Jessica Marc	Shelbie McDonnell	Marlies Murdoch	Hui-Hsuan O'Kane
Millie Mardahay	Ashley McDonough	Nora Murray	Jason Okonofua
Tina Louise Marez	Michael Mcelvy	Noreen Muscat	Ian Okuda
Rachael Marie	Mary McFarland	Kersten Naab	Lana Oleksyuk
Leonor Marin-sanchez	Riley McGlinchey	Azadeh Nabavi	Marta Olivares
Brandon Marquez	David McIntosh	Dechen Tsomo Naga	Jennifer O'Neill-Cha
Atipol Marranate	Bridget Ann McMahan	Nozomi Nagai	Tiffany Orndoff
Michael Deshawn Marshall	James Robert McStay	Paul Nakamoto	Monica O'Rourke Bravo
John Martin	Monique Meek	Caitlin Christine Nelson	Gloria E Ortiz
Bobby Martin	Angel Melchor	Juana Nesta	Jose Ortiz

Joette Oseguera	Carlota Phillips	Eileen Reo	Matthew Roy
Lora Suzuye Pada	Lance Phipps	Jenna Reyes	Edagr Rubio
Jose Palacios	Tianna Picot	Jackie Reyes	Krystal Ruebsamen
Lois Pallares	Zina Marie Pittman	Jonathan Rice	Lisa Ruff
Aleta Pallios	Kevin Pitts	Nicole Rigg	Yaneth Ruic
Tina Licari Palmer	Samantha Podborny	Patty Riley	Johanna Ruiz
Narayanan Parameswaran	Cesar Pomajulca	Joanna Allison Riquelme	Paul Ruiz
Timothy Parham	Jennifer Poon	Constance Robertson	Brenda Alejandra Ruiz
Joey Parker	Tamy Portillo	Olivia Roddy	Simon Russell
Tushar Patel	Ahmad Qayyum	Andrea Rodriguez	Yocelyn Ruvalcaba
Sujal Patel	Lijuan Qian	Stefanie Rodriguez	Piotr Rzedzian
Eric Anthony Patino	Cuong Quan	Leo Rodriguez	Temmara Saephan
Harley Pearlman	Laura Ragsdale	Chris Rodriguez	Ahmed Said
Jessica Pekke	Vikram Raina	Sonya Rodriguez	Alicia Salas
Jose Alejandro Pelayo-Amador	Mandeep Ralh	Christopher Rodriguez	Jessica Salazar
Aaron Peralta	Ganapathy Ramamoorthy	Shelbi Rodriquez	Carlos SalazarRazo
Amelia Love Percival	Sophia Ramirez	Michael Rogers	Philip Contreras Salcido
Susan Pereira	Marina Ramos	Michelle Romualdo	Momodou Sallah
Luz Elena Perez	Wade Randlett	Monica Rosado	Stephen Salser
Liliana Perez	Dr.Shannon Rapoport	Christina Rosales	Erika Sanchez
Kalani Perreira	Clemence Rasigni	Katherine Ann Rosch	Sherry Sanders
Allan Pershina	Lily Ratleff	Megan Rose	Sriram Sankavan
Christine Pham	Erica Ray	Darcel Ross	Sheena Louise Sannicolas
Lam Van Phan	Travis Lee Redelman	John Roughton	Katherynne Santos
Barbara Phengduang	Ashley M. Remy	Alison Rouhas	Ismail Alper Sarikasap

2021 NEW MEMBERS

Patricia Marzan Saturnio	Jayna Rey Shawver	Solorio Ramirez	Nassim Taherian
Douglas Sayuk	Ashley Marie Sherfey	Ekaterina Sorokina	Mari Tanaka
Ellen Scanlon	Danielle Sheridan	Mehrnoush Soroush	Neha Tanwar
Michael Schibler	Rose Shields	Damaris SotoHernandez	Kelly Tarkman
Tekla Schlaich	David Shook	Anita Mieko Southard	Kendra Taylor
Ofir Schlam	Stan Shpak	Edith Souvannarack	Delcy Taylor
joshua schneider	Michael Vincent Sierra	Tina St. Germain	Augusto Tazzoli
Zosia Scislowski	Papinder Singh	Erin Stephens	Jocelyn Tejada
Yapatikan Seibold	Malkit Singh	Lauren Stevenson	Ebony LaShae Temaika
Cindy Seitz	Harinder Singh	James Stinnett	Allen Terry-Gray
Arun Selvaraj	Jonathan Sisseck	Will Streyer	Tenei N.S. Tevaseu
Sigbert Sequeira	Grace Sjoberg	MaryJane Strom	Kimberly Danielle Thomas
Suresh Kumar Sermugakani	Sacha Skifter	Justin Suca	Clemarr Yvette Thomas
Shelley Gabriella Serrano	Umamaheswari Rethina Smith	Riley Sullivan	Susana Barajas Tinoco
Reina Shah	Michelle Smith	Tian Sun	Denise Toledo
Abdul Shameer	Caron Nicole Smith	Shirley Sutliff	Rosalie Tolson
Yanqin Shan	Daniel Sneed	Tina Suza	Gregory Daniel Toole
Ling Shang	Ruby Solemani	Heather Swaim	Jovita Sanchez Torres
Natalie Shattuck	Sara Solis	Lauren Swenson	Rachel Kay Townsend
Andrea Riahna Shaver	Eva Solivar	Alissha N. Sykes	Kelly Trainer
Damar Jeremy Kevin Shaw	Martha Selene	Jonathan Taggart	Long Tran

Anthony Tran	Vanko Vankov	Zhaodong Wang	Qing Yang
Hamilton Transitional Housing	JoseLuis Vargas	Sandra Wasicek	Fan Yang
Megan Trent	Lilia Vargas	Sabrina Watts	Nan Yang
Phat Trinh	Guadalup Vargas-Rivera	Leon Wei	Meri Yani
Radihika Tripuraneni	Mariann Elizabeth Vasquez	Lauren Melissa Wiest	Fnu Yashu
Zachary William Truter	Ivonne Maria Vazquez	Robert Wildes	Jimmy Yen
Judy Tsai	Victor Vazquez Zayas	Edward Wilkinson	Borami Yoon
Geraldine Tuch	Gopal Narasimhan Vedartham	Mariah Williams	Molly Yoon
Bolorerdene Tumurbaatar	Maria Vencer	Maria Williams	Kyle Young
Christy Turbeville	Gabriela Vera	Brianna Willis	Joanus A. Youngblood
Katie Turnbeaugh	Dorothy Vergel	Chris Wilson	Xiangfei Yu
Neal Uppal	Thomas Allan Vincent	Eric Wittenberg	SeungKon Yu
Sameena Usman	EvaMarie Viola	Alicia Wood	Risa Yuhas
Erkin Uzakov	Amit Vohra	Teresa D. Wood	Gabriela Zambrano
Alejandra Valdivia	Janet Voong-Lay	Katrina Wright	Luis Zarate
Luis Angel Valdivia-Rangel	Valerie Vu	Julie Wu	Ashleigh Zeile
Joaquin Valera	Sami Vuong	Shuanhgui Wu	Tam Zena
VeronicaJ Valeriano	Morgana Walden	Beth Mary Wyatt	Daniel Grey Zenzano
Jozef Vandepeute	Ayanna Walker	Elizabeth Wyler	Xiaodong Zhang
Randy Vang	Megan Walls	Wenhua Xue	Kevin Zunker
Terry Vang	Xin Wan	Crystal Yan	





APPENDIX B

UNAUDITED REPORT 2020

BAY.ORG

2020 STATEMENT OF ACTIVITIES (INCOME STATEMENT)

	<u>Jan-Dec 2020</u>
Revenue	
Development Revenue	
Development Revenue - Donations & Sponsorships	144,706.57
Development Revenue - Fundraising Events	5,000.00
Development Revenue - Grants & Contracts	369,392.04
Development Revenue - Memberships	62,195.30
Total Development Revenue	581,293.91
Operating Revenue	1,528,125.72
Group Sales Revenue	359,426.44
Retail Revenue	285,878.74
Special Event Revenue	36,984.27
Onsite Program Revenue	2,245.00
Offsite Program Revenue	153,470.00
Rental Income	27,775.00
Total Revenue	<u>2,975,199.08</u>
Cost of Good Sold	
Cost of Goods Sold - Retail	97,815.84
Total Cost of Good Sold	<u>(97,815.84)</u>
Gross Revenue	<u>2,877,383.24</u>

BAY.ORG

2020 STATEMENT OF ACTIVITIES (INCOME STATEMENT)

	<u>Jan-Dec 2020</u>
Expenditures	
Salaries & Benefits	4,058,029.41
Contract Services	174,980.21
Professional Fees	186,954.59
Office Expenses	141,830.27
Travel Expenses	80,674.62
IT Expenses	227,923.00
Repairs & Maintenance	61,159.58
Utilities	523,326.86
Operating Expenses	227,628.16
Advertising Expenses	55,147.47
Taxes & Licenses	18,472.66
Insurance	165,485.22
Administrative Expenses	833,333.75
Total Expenditures	<u>(6,700,134.20)</u>
Change in Net Assets	<u>(3,822,750.96)</u>
Other Income and Expenses	
Other Income	14,909.21
In-Kind Revenue	5,000.00
Other Expenses	214,631.62
In-Kind Expenses	5,000.00
Depreciation & Amortization Expenses	877,719.99
Total Other Income and Expenses	<u>(1,077,442.40)</u>
Net Assets	<u>(4,900,193.36)</u>



MANTA RAY
Manta birostris

Clown divers, who rescue the largest in the world. They can reach nearly 40 feet in length and weigh up to 4,000 pounds.

These gentle giants live in tropical and temperate waters. A couple can rear several youngsters, feeding on the plankton. Generally calm, manta rays are highly intelligent according to movement of position, current patterns, and other behaviors.

Sadly, human caused climate change is affecting the possibility of plankton. And rising ocean levels may reduce it as a species. As you're thinking about it, we can't help but think of the benefits of manta rays for governments.

Manta Ray Habitat
While Manta Rays are not found within the coral waters of the Far East, they are found in warm surrounding the equator.



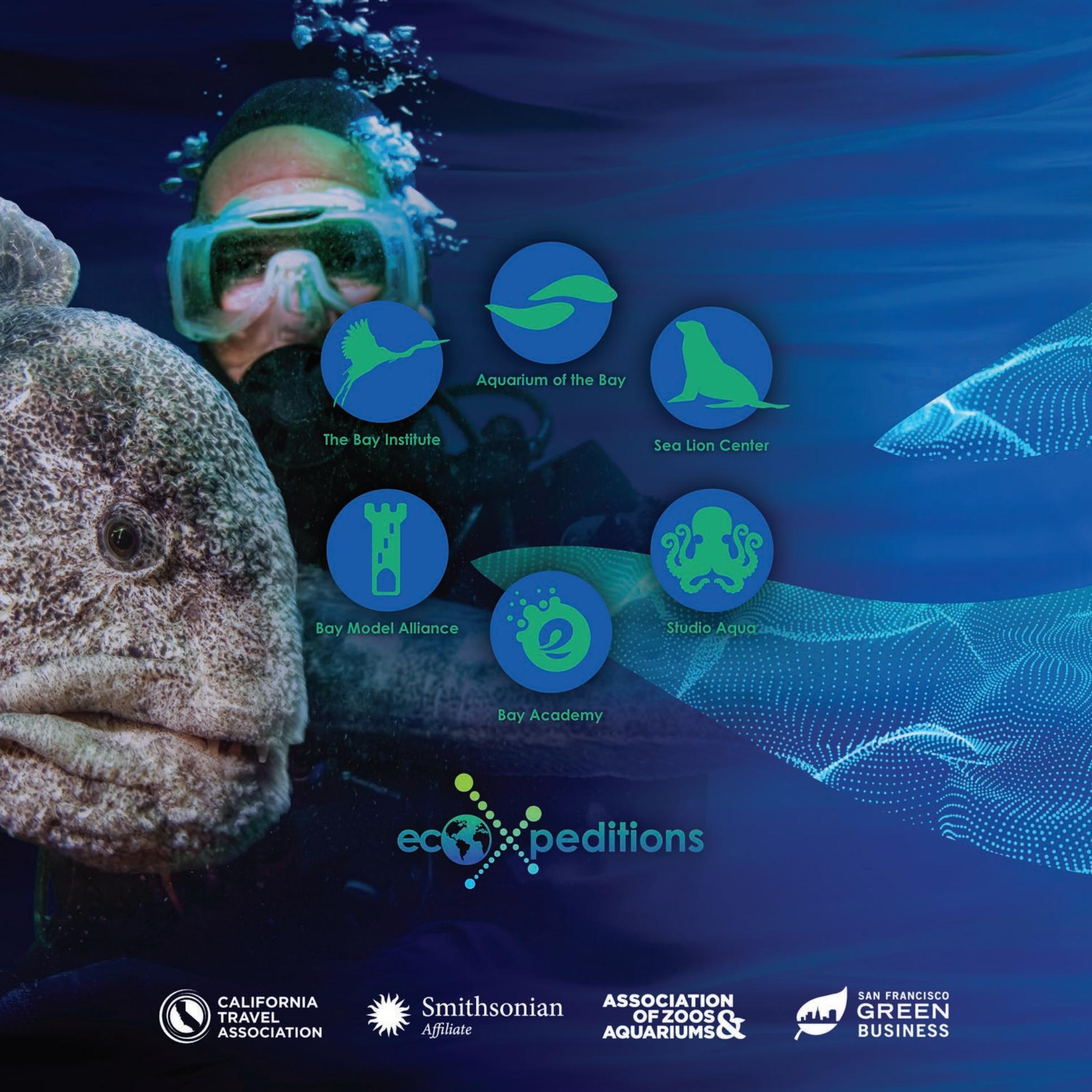
BAY.ORG

STATEMENT OF FINANCIAL POSITION (BALANCE SHEET)

as of 12/31/20

	<u>12/31/2020</u>
Assets	
Cash or Cash Equivalents	893,848.82
Accounts Receivable	148,004.41
Other Accounts Receivable	4,469.22
Inventory	108,780.86
Prepays	39,299.02
Fixed Assets	4,744,825.19
Other Assets	65,252.56
Total Assets	<u>6,004,480.08</u>
Liabilities and Net Assets	
Liabilities	
Accounts Payable and Other Current Liabilities	2,057,040.29
Long-Term Liabilities	6,649,018.00
Total Liabilities	8,706,058.29
Net Assets	2,198,615.15
Change In Net Assets	(4,900,193.36)
Total Liabilities and Net Assets	<u>6,004,480.08</u>





The Bay Institute



Aquarium of the Bay



Sea Lion Center



Bay Model Alliance



Bay Academy



Studio Aqua

ecopeditions

