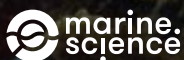


# The Art of Saving the Ocean

How Island Restoration  
Saves People & Nature



Throughout the ages, as we have criss-crossed the ocean, humanity has repeatedly introduced new species to different lands. Migration, a natural phenomenon, has played a pivotal role in species evolution, shaping our environment for millennia. Yet, in recent history, the scale and pace of these introductions has undeniably taken a toll on the natural world, leading even to the extinction of endemic species. The detrimental impact of invasive species has been evident for centuries and I have seen for myself, when visiting the remote islands of the Chagos Archipelago, how rats have decimated regionally important bird populations across many of the islands.

Considering the adverse impact humans have had on our precious home, planet Earth, the questions arise: Can we reverse these human-induced introductions? And if so, is it worthwhile given the myriad other challenges we face? Increasingly, the answer to both these questions is 'yes'.

Scientists and conservationists have irrefutably demonstrated that restoring and rewilding oceanic islands is not only possible, but also achievable. Today's symposium will showcase some of these success stories. Advances in our understanding of the biological processes on islands enable us to better anticipate the effects, and necessary scope, of successful rewilding and restoration

efforts. Modern technology and management techniques, coupled with traditional knowledge and community engagement, has transformed what were once risky ventures into well-informed initiatives with a higher likelihood of success.

As our understanding of the link between terrestrial islands and the adjacent marine ecosystems increases, it becomes increasingly evident that removing invasive plants and animals has an effect that reaches far beyond the sandy shores of these remote rocky outposts in the middle of the ocean. Scientific research has shown the pivotal role that healthy islands play in fostering the recovery of coral populations post-bleaching events, as well as in enhancing the abundance and diversity of marine animal and plant communities. In a world confronted by climate change, the significance of providing every possible assistance to the ocean cannot be overstated.

With the help and support of many of the people you will hear from today, we will do just that.

**Ernesto Bertarelli,  
Co-Chair, Bertarelli Foundation**





# Phillip and Patricia Frost Museum of Science

## 7th December 2023

### Agenda

**08:30 – 10:00 Breakfast and Registration**

*Atrium*

**10:00 – 10:20 Welcome and Introductions**

*Planetarium*

**10:20 – 11:20 Session One: Ocean-Island Connections**

An introduction to the science that connects islands and the ocean

*Planetarium*

**11:50 – 13:15 Session Two: Rewilding in Action**

A series of case studies highlighting successful restoration and rewilding of oceanic islands

*Planetarium*

**13:15 – 14:20 Lunch**

Lunch on the terrace with opportunities for exploring the museum

*Knight Learning Center, Level 5*

**14:20 – 14:45 SC Johnson's screening of the *Blue Paradox* film**

*Planetarium*

**14:45 – 16:00 Session Three: People and Nature**

The role of diverse communities in ocean and island restoration

*Planetarium*

**16:30 – 17:45 Session Four: Funding Change**

The approach of business and finance to support restoration and rewilding

*Planetarium*

**18:00 – 19:00 Cocktail Reception**

*The Vista, Level 4*



# Everything is Connected

Islands. A word that evokes thoughts of magical and special places. There are 465,000 islands around the world that together support unique biodiversity and human societies that are found nowhere else. Yet, paradoxically, they are also extinction epicentres that are threatened by local and global stressors – an incredible 75 per cent. of all amphibian, bird, mammal and reptile extinctions have occurred on islands.

Invasive species are well-recognised as one of the main causes of extinction events, however, recent studies have unveiled a more extensive influence, extending into the marine environment. Seabirds, integral to the delicate balance of island ecosystems, face decimation when invasive species such as rats, mice, and goats invade their habitats. The consequences are far-reaching; with the departure of seabirds, the vital nutrient subsidies from their guano no longer enrich the islands, detrimentally affecting adjacent reefs and the myriad marine life they harbour.

Islands with seabirds and other native wildlife boast nutrient levels in the surrounding ocean that exceed those around islands without seabirds by a factor of more than 250 times.

Such islands have 50 per cent. more fish in their waters and have coral reefs that recover four times faster after bleaching events. **Healthy islands support a healthy ocean.**

In the pursuit of global conservation goals, the restoration of islands and the protection of surrounding oceans emerge as imperative strategies. Such endeavours not only revive these wild, biodiverse landscapes but also fortify the livelihoods and economies of local communities intricately linked to these island ecosystems. Safeguarding islands is not merely an act of ecological preservation; it is an investment in a connected system that spans from land to sea.

**250x**  
more nutrients

**50%**  
more fish

**4x**  
faster recovery





## Welcome and Introductions



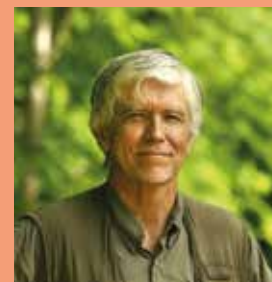
**Susannah Streeter**

Susannah has two decades of experience as an international broadcaster for the BBC. She is also an expert in financial markets, and hosts global conferences focusing on the economy and the environment around the world.



**Dr. Wes Sechrest, Re:wild**

Wes co-founded Re:wild, where he is CEO, and Board Chair. He leads Re:wild's efforts to use nature-based solutions to address the interconnected biodiversity, climate, and human wellbeing crises. He is an expert on global biodiversity conservation and is extensively involved in advancing conservation efforts for endangered species and ecosystems.



**Prof. Russ Mittermeier, Re:wild**

Russ is Re:wild's Chief Conservation Officer. In this role, he leverages his extensive experience and network to protect wildlife and wildlands—enormous reservoirs of biodiversity and key components in preventing runaway climate change—particularly in biodiversity hotspots and critical wilderness areas. He is regarded as a world leader in the field of biodiversity and tropical forest conservation.





SESSION ONE

# Ocean-Island Connections

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The science that connects  
islands and the ocean





## The Land and the Sea

Prof. Sandin introduces the inseparable links between land and marine ecosystems in the context of island restoration and shows that, by utilising traditional knowledge and novel research methods, oceanic islands offer opportunities for the recovery of biodiversity and human livelihoods.



### KEYNOTE SPEAKER

#### Prof. Stuart Sandin, Scripps Institution of Oceanography

Stuart is the Oliver Chair in Marine Biodiversity and Conservation at Scripps Institution of Oceanography, UC San Diego. His research focuses on community ecology, investigating how organisms interact in complex marine communities. Most of his work is conducted in tropical coral reef ecosystems of the Pacific and Caribbean and he has coordinated multiple ship- and land-based expeditions to the remote islands of the central and south Pacific Ocean, with much work conducted in the Line Islands archipelago. Stuart has been using this island gradient, and others, to study the individual and interacting roles that local human activities and oceanographic context play in the fisheries dynamics and general functioning of coral reef ecosystems.



# Understanding Ocean-Island Connections in the Context of Climate Change

From the perspective of the land, the ocean, and invasive species, scientists working at the frontline of research and management will explore and discuss their findings. They show how science has informed rewilding efforts and how this is particularly important in the context of climate change.



## **MODERATOR**

**Prof. Heather Koldewey,  
Zoological Society of London**

Heather has worked at the Zoological Society of London since 1995 as a postdoctoral research scientist, curator of London Zoo Aquarium, Head of Marine and Freshwater Conservation and now as Senior Marine Technical Advisor. She is also an Honorary Professor at the University of Exeter and National Geographic Explorer. She focuses on marine conservation solutions, from co-founding Project Seahorse in 1996 to building the net recycling and seaweed farming social enterprise COAST-4C in 2021. Since 2017, Heather has led the Bertarelli Foundation's Indian Ocean Marine Science Programme. This UN Decade of Ocean Science for Sustainable Development endorsed Action has a strong focus on regional capacity building.

# Speakers



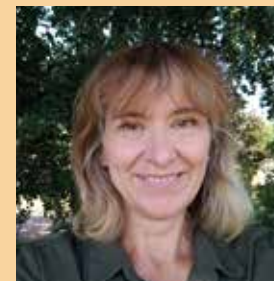
**Dr. Casey Benkwitt, Lancaster University**

Casey's research examines how seabird nutrients influence coral reef ecology and resilience. She is investigating the spatial and trophic extent of seabird-derived nutrients in coral-reef food webs. By combining her research with island restoration, she seeks to understand the timescales and contexts under which these conservation strategies benefit coral reefs.



**Dr. Pete Carr, Chagos Conservation Trust**

Pete is a former Royal Marine who was stationed in the Chagos Archipelago for four years. His research aims to eradicate invasive rats from the northern atolls and manage the abandoned coconut plantations on these islands. This will facilitate a more natural terrestrial habitat conducive to native flora and fauna.



**Dr. Jenny Daltry, Re:wild and Fauna & Flora**

Jenny has led ecosystem restoration and endangered species recovery programs for over 30 years, especially in Asia and the Caribbean. As Caribbean Alliance Director for Re:wild and Fauna & Flora, Jenny is increasingly interested in how rewilding strengthens the resilience of wildlife, people and economies to climate change.





SESSION TWO

# Rewilding in Action

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Recovering habitats and species on oceanic islands

# Hope from Rewilding – a Series of Case Studies

Mauritius, the home of the iconic dodo; Aldabra, the World Heritage Site in the Seychelles; and the local reefs of Miami, Florida. Three conservationists share their practical experiences helping to save some of the rarest species in the world and why restoring nature’s balance is so important.



**MODERATOR**

**Keri O’Neil, Florida Aquarium**

Keri is the director of the Florida Aquarium’s Coral Conservation Program. She oversees the corals rescued from the spread of Stony Coral Tissue Loss disease and the Aquarium’s induced spawning lab – the site of the world’s first induced spawn of the threatened pillar coral in a laboratory setting.

# Speakers



**Lad Akins, Phillip and Patricia Frost Museum of Science**

Lad oversees the Frost Science Museum’s conservation programmes, as well as the museum’s diving and vessel operations. His focus is on developing and implementing conservation programmes to protect and restore Florida’s coral reef.



**Jeremy Raguain, Seychelles Island Foundation**

Jeremy is a Seychellois conservationist pursuing a Master’s at Columbia University. He has served as the Seychelles Permanent Mission to the UN’s Climate and Ocean Advisor. Five years with the Seychelles Island Foundation showed him the vital importance of connecting people with science and nature.



**Dr. Vikash Tatayah, Mauritius Wildlife Foundation**

Vikash is the conservation director at the Mauritian Wildlife Foundation and has been working in conservation for more than 26 years. His projects have led to the successful reintroduction of several endemic bird and reptile species.



# Taking Rewilding to Scale

We can heal our ocean by restoring and rewilding islands. Three expert scientists look across the Pacific, Caribbean and Indian ocean to see where successful rewilding has been achieved and consider how to take these examples to scale, including through the Island Ocean Connection Challenge.



**MODERATOR**

**Dr. Karl Campbell, Re:wild**

Karl is the director of Latin America islands at Re:wild. He has spent most of his career implementing island rewilding projects, primarily in Latin America. He is now working with local partners on a ridge-to-reef rewilding initiative spanning the Pacific coast of Latin America, from Mexico to Chile.

# Speakers



**Dr. Patty Baiao, Island Conservation**

Patty has been leading Island Conservation’s projects in the United States since 2016, including the rat removal on Lehua, Hawaii and the planned mouse removal on Midway. Her doctoral work focused on the evolution of phenotypes in seabirds and she has conducted extensive fieldwork in the Galapagos Islands and in Brazil.



**Prof. Rob Dunbar, Stanford University**

Rob is a Professor of Earth Sciences at Stanford University whose interests span climate change, science-to-policy, marine ecology, oceanography, and biogeochemistry. His current focus areas include ocean carbon dioxide removal, Antarctic ice sheet stability and melt rates, and climate change impacts on coral reefs.



**Prof. Nick Graham, Lancaster University**

Nick is Chair of Marine Ecology at the Lancaster Environment Centre, UK, a Royal Society Research Fellow, and adjunct Professor at James Cook University, Australia. His research programme takes an ecosystem and social-ecological approach to investigate how coral reefs are changing, what drives these changes, and the implications for ecosystem function and human societies.



SESSION THREE

# People and Nature

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Using local ecological knowledge to create lasting solutions





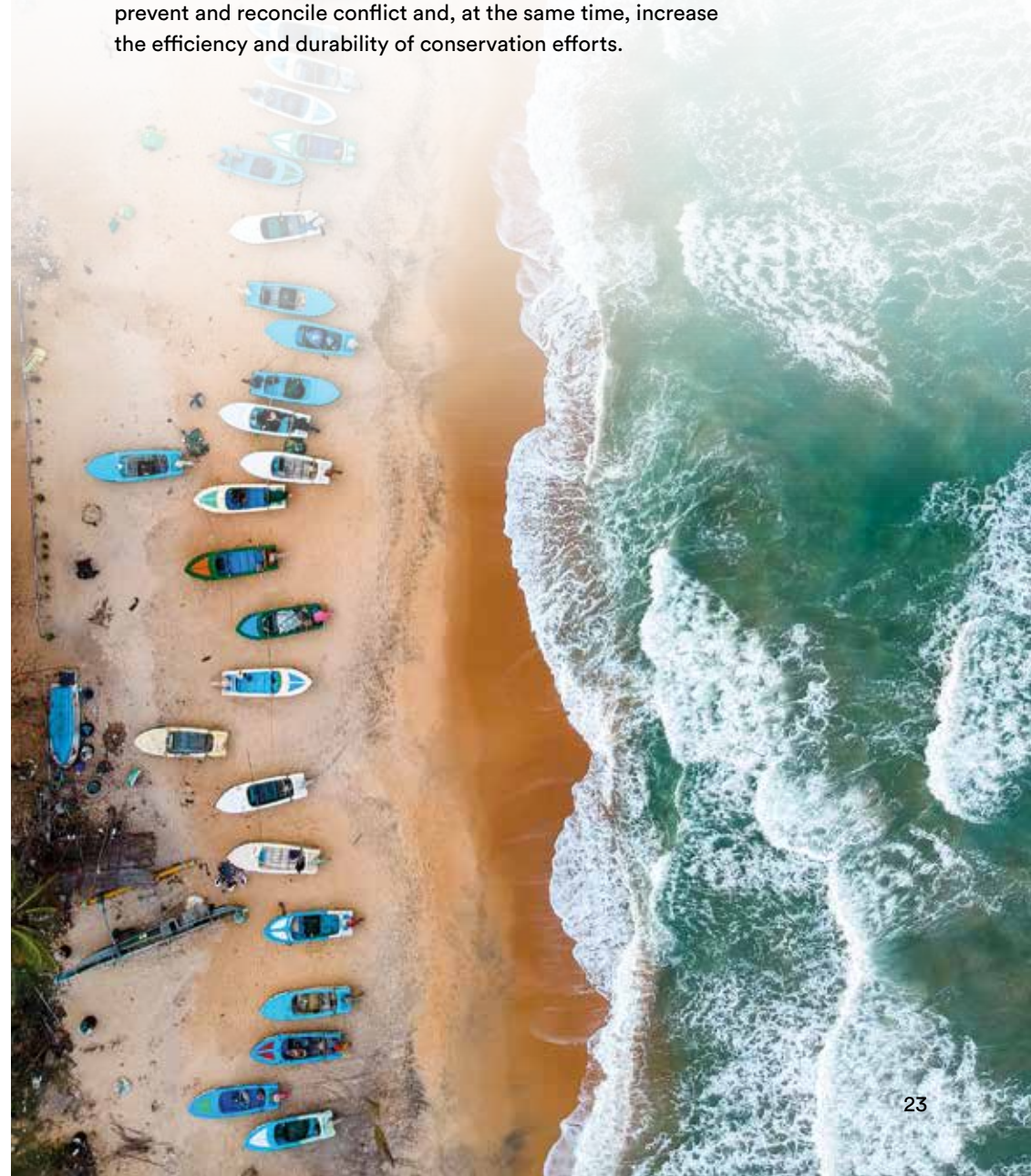
**KEYNOTE SPEAKER**

**Francine Madden, CPeace**

For nearly 30 years, Francine, Executive Director of the Center for Conservation Peacebuilding (CPeace), has successfully intervened in controversial conservation conflicts, using these issues as entry points to reconcile deep-rooted, systemic conflicts that impede progress. By transforming relationships and dialogue processes - whether over mountain gorillas, wolves or island restoration - Francine's work results in lasting shared wins for people and conservation. Further, her efforts afford progress on other issues ranging from empowerment of marginalized peoples, climate-change adaptation, and more inclusive, effective governance. Francine's work has been featured in *The Washington Post*, *Bloomberg Businessweek* and *Wall Street Journal*.

## Solving the Complexity of Conservation

Conservation can be controversial, polarising, and complex. Francine describes how she has worked with diverse communities around the world to develop approaches which prevent and reconcile conflict and, at the same time, increase the efficiency and durability of conservation efforts.



## Success Stories – Communities Driving Action

We showcase three very different communities, local community members from Antigua, special forces veterans, and early career scientists, each involved in restoration and rewilding. Together they demonstrate the importance and opportunities for diverse sectors to engage in conservation activities.



### MODERATOR

#### Steven Bailey, Phillip and Patricia Frost Museum of Science

Steven is VP of Biological Programs at the Frost Museum. He joined the Frost Museum after four decades at the New England Aquarium as an aquarist and curator of fishes. Bailey's passions include building exhibits to showcase obscure aquatic habitats and contributing to the preservation of threatened aquatic environments.

## Speakers



#### Shanna Challenger, Environmental Awareness Group

Shanna is a conservation biologist hailing from Antigua and Barbuda. She focuses on protecting endangered species and rewilding islands in the Caribbean. Through her research and advocacy, Shanna thrives in finding compelling ways to demonstrate the irreplaceable value of her country's biodiversity.



#### Laura-Li Jeannot, Lancaster University

Laura-Li is a second-year PhD student. Her research aims to understand how variations in seabird-derived nutrients impact critically understudied fish communities. By looking across a gradient of seabird density in Seychelles and the Chagos archipelago, she aims to how seabird-derived nutrients benefit these communities and affect overall reef productivity.



#### Jim Ritterhoff, Force Blue

As a professional writer, Jim has penned and directed award-winning screenplays and documentaries. An avid SCUBA diver and lifelong environmentalist, Jim served on the Board of Directors of the Central Caribbean Marine Institute (CCMI) and was awarded by Scuba Diving Magazine and the Seiko Watch Corporation for his work with FORCE BLUE.





SESSION FOUR

# Funding Change

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Business and finance  
approaches to supporting  
rewilding and restoration





#### KEYNOTE SPEAKER

### Audrey Azoulay, UNESCO

Director-General of UNESCO since 2017, Audrey Azoulay launched a vast Strategic Transformation programme for the Organization with a view to position UNESCO at the heart of emerging challenges in the 21st century. A former student of the *Ecole Nationale d'Administration*, Audrey Azoulay is a graduate of the *Institut d'Etudes Politiques de Paris* and holds a Diploma of Business Administration from the University of Lancaster (United Kingdom). Active in the cultural sector from the outset of her career, she worked, among other things, on the financing of the French public audiovisual sector and on the reform and modernisation of the French public aid systems for the film industry.

Audrey Azoulay is committed to positioning UNESCO as a platform for humanist cooperation, as a standards-producing arena and as an agency of experts that helps to disseminate knowledge and know-how throughout the world to the greatest number of people.

## The Decade of Ocean Science

The United Nations has proclaimed a **Decade of Ocean Science for Sustainable Development (2021-2030)** to support efforts to reverse the cycle of decline in ocean health and gather ocean stakeholders worldwide behind a common framework that will ensure ocean science can fully support countries in creating improved conditions for sustainable development of the ocean.





# Creating Opportunity for Businesses to Protect and Restore Biodiversity

Businesses play a crucial role in the quest for sustainable development, but there is increasing realisation that they cannot sustainably grow, or achieve their climate goals, without protecting and restoring nature. Here, leaders in business, finance, and philanthropy will discuss their experiences, describe the current barriers to corporate engagement on the issue and what opportunities are on the horizon.



## MODERATOR

### Daymond John, The Shark Group

Daymond is the Founder & CEO of FUBU, a company he started by taking out a \$100,000 mortgage on his mother's home and grew into a \$6 billion lifestyle brand with worldwide recognition. Today, he continues to be revered as one of the greatest marketing and branding minds and has taken this expertise into a variety of industries. Daymond is a co-star on ABC's four-time Emmy Award Winning TV Show, Shark Tank, one of the most highly sought-after keynote speakers, and CEO of his consulting firm, The Shark Group.

# Speakers



### Prof. Jan Bebbington, Lancaster University

Jan is an academic accountant who focuses on how companies can address their ecological impacts and progress sustainable development. She consults with companies who are seeking to contribute to ocean stewardship.



### Dax Dasilva, Lightspeed & Age of Union

Dax is a global tech leader and environmental activist who is well known as the creative mind behind Lightspeed Commerce Inc. and non-profit environmental alliance Age of Union that supports and makes visible a global community of changemakers working on the ground to protect the planet's threatened species and ecosystems.



### Nicolas Freudiger, ID Genève Watches

Nicolas is the co-founder and CEO of ID Genève Watches. After graduating from the EHL Hospitality School in 2015, Nicolas decided to pursue creating a new identity in the world of watchmaking, entirely based on sustainable development and the integration of circular materials that have a lower carbon footprint than the industry average.

# Exploring New Methods to Finance Restoration and Rewilding

Sustaining healthy islands and a healthy ocean requires funding, but there is a lack of established mechanisms and finance is lacking. Here an expert panel discuss new and innovative approaches to financing protection and restoration, such as blue bonds, carbon, and biodiversity credits.



**MODERATOR**

**Susannah Streeter**

Susannah has two decades of experience as an international broadcaster for the BBC. She is also an expert in financial markets, and hosts global conferences focusing on the economy and the environment around the world.

## Speakers



**Dr. Martin Schaefer, Fundación Jocotoco**

Martin is the CEO of Fundación Jocotoco in Ecuador, which protects irreplaceable regions. The organization specialises in regional conservation, such as establishing the 60,000 km<sup>2</sup> marine reserve linking Galapagos with Cocos Island. He specialises in biodiversity credits and protecting the buffer zones of national parks to enable climate adaptation.



**Prof. John Virdin, Duke University**

John studies marine conservation policy broadly, and specifically tropical fisheries management to alleviate poverty. He teaches at Duke's Nicholas School of the Environment and leads a research program at the Nicholas Institute. Prior to coming to Duke in 2015 he worked for the World Bank for over 12 years.





## Bertarelli Foundation

The Bertarelli Foundation was founded in 1988 in memory of Fabio Bertarelli by his widow Maria Iris and their two children, Ernesto and Dona. Today the foundation is active in those fields that have an historic significance to the family such as life science, marine science and conservation, education and sport. The foundation's marine science programme has supported science and conservation in the Indian Ocean region for more than a decade.

[www.fondation-bertarelli.org](http://www.fondation-bertarelli.org)

## Re:wild

Re:wild launched in 2021 combining more than three decades of conservation impact by Leonardo DiCaprio and Global Wildlife Conservation, leveraging expertise, partnerships and platforms to bring new attention, energy and voices together. Along with its global network of more than 500 partners, Re:wild is working to conserve over 460 million acres of the wild and driving targeted conservation action for nearly 200 threatened species, with more than 33,000 species benefiting from Re:wild's site-based conservation work.

[www.rewild.org](http://www.rewild.org)



2021 United Nations Decade  
2030 of Ocean Science  
for Sustainable Development

*The Bertarelli Foundation's marine science programme is an endorsed Action of the UN Decade of Ocean Science for Sustainable Development, and is helping deliver 'the science we need for the ocean we want'.*

[www.oceandecade.org](http://www.oceandecade.org)





