

An underwater photograph of a vibrant coral reef. The scene is dominated by various types of coral, including large, rounded brain coral and smaller, branching structures. Numerous bright orange fish are scattered throughout the water, swimming around the coral. The lighting is bright, creating a clear blue water environment. The overall composition is dynamic and colorful.

YOUTH OCEAN ACTION

TOOLKIT

Youth Ocean Action Toolkit

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Welcome Letter

Dear Readers,

This Youth Ocean Action Toolkit was created by six young writers to share the importance of Ocean Literacy and Marine Protected Areas (MPAs) for sustainable ocean management. It contains a collection of stories and case studies illustrating the power of collaboration, community action, and youth activism in conserving our worldwide ocean. Each of the writers combined their own knowledge with firsthand accounts from local community members, protected area managers, and ocean explorers to describe unique ocean ecosystems from the Arctic to the South Pacific and beyond.

Youth environmental advocates of today possess a level of curiosity, persistence, and creativity that is truly remarkable. We were very excited to have an opportunity to work with such a diverse group of young leaders to develop this toolkit. At The Ocean Foundation, diversity, equity, inclusion, and justice are core cross-cutting values. The toolkit was written, designed, and translated by individuals between the ages of 18-26 from India, Mexico, England, Egypt, Nigeria, Argentina, and the United States. They each contributed their unique global perspective, personal experiences, and awareness of ocean health and conservation.

We strived for our collaboration with the toolkit writers to extend deeper than content creation. The Ocean Foundation provided opportunities for the authors to virtually participate in the 51st Annual Conference for the North American Association for Environmental Education as well as the 5th International Marine Protected Areas Congress. On March 15, 2023, we helped organize a webinar in

collaboration with Open Communications for the Ocean (OCTO) and the National MPA Center that featured the youth authors as panelists. You'll see these learning experiences reflected throughout the toolkit.

The ocean is facing a multitude of threats. To reverse the trend of destruction of ocean environments around the world, The Ocean Foundation carries out global ocean conservation initiatives on the topics of ocean acidification, ocean literacy, blue carbon, plastic pollution, and more. We prioritize partnerships in all our work, and various partners lent their expertise to assist with the development of this toolkit. We are thankful to National Geographic Society for their support and to the many experts who shared their knowledge and connections. We are especially grateful to the local community members who inspired us with their stories of ocean activism, from the Hā'ena Community-Based Subsistence Fishing Area in Hawaii to Chumbe Island Coral Reef Sanctuary in Zanzibar and Gwaii Haanas in Canada.

We hope this toolkit, created by youth and for youth, will serve as a resource to motivate young activists and early-career ocean professionals across the globe and for generations to come. Help us engage and amplify youth voices by sharing this toolkit and using #MyCommunityMPA on social media. Together, we can strengthen our collective impact on ocean health.

Sincerely,

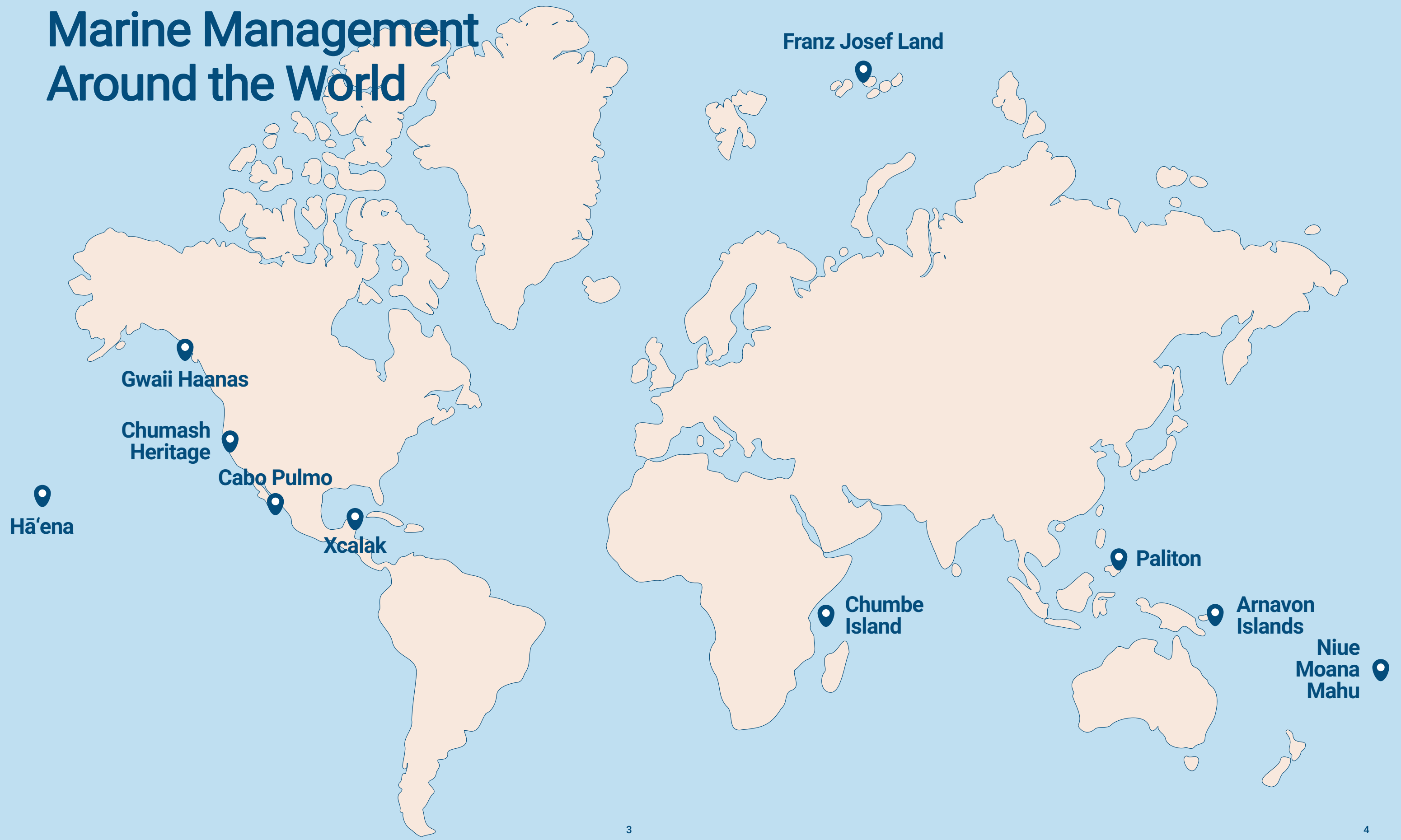
Frances Lang

Frances Lang

Serag Heiba

Serag Heiba

Marine Management Around the World





Ocean 101

Humans have a deep and complicated relationship with the ocean.

You are probably already familiar with some of the ways that human activities impact our ocean, such as pollution, warming, biodiversity loss, acidification, harmful algal blooms, and many other problems that threaten marine creatures and alter the delicate ocean ecosystem.

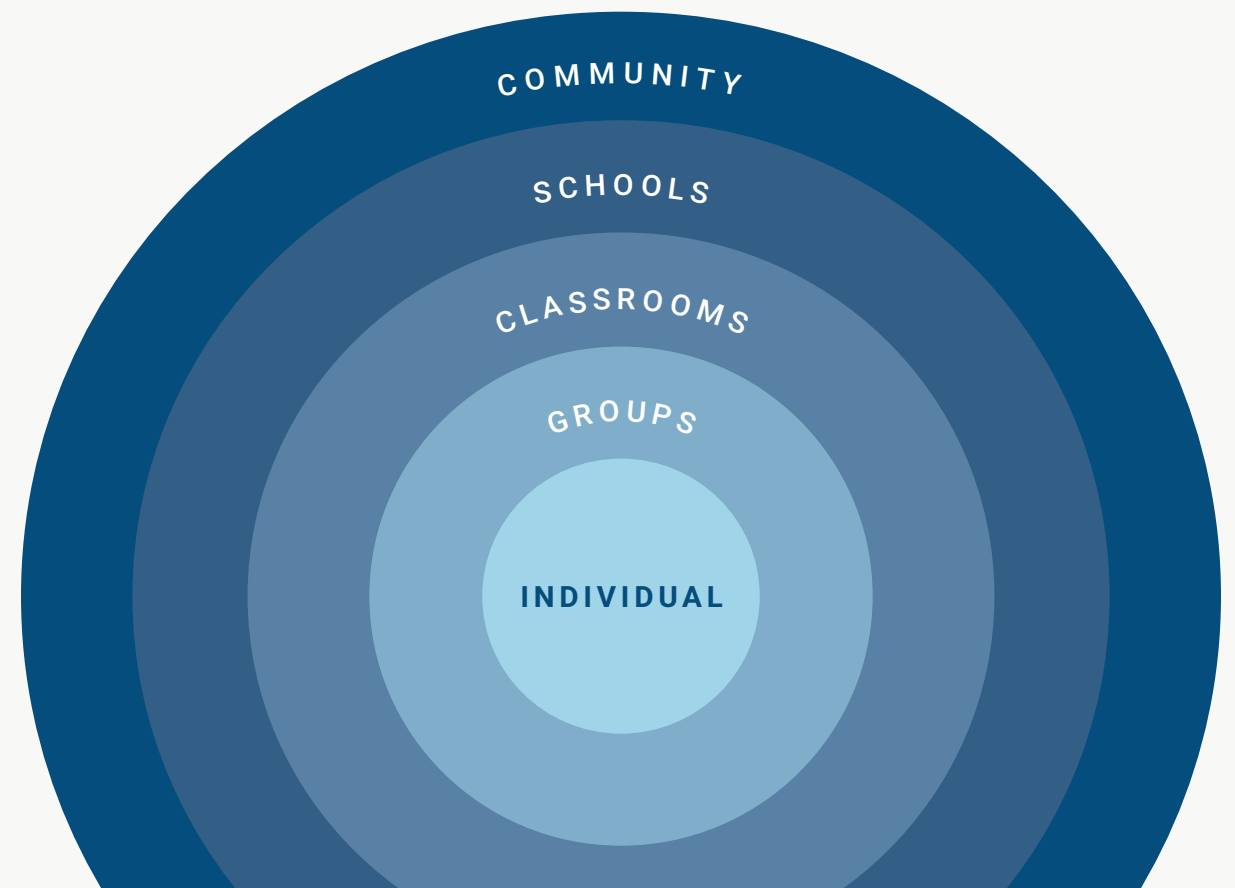
However, we don't always recognize that humans are part of the ecosystem, rather than destructive outsiders. Imagine if you woke up one morning and our ocean had mysteriously disappeared in the night. How would humans be impacted? The ocean affects weather patterns, produces precious resources like food and oxygen, provides economic stimulation through tourism and marine recreation, and influences cultural values and traditions. That is why it is "our" ocean since we belong to it as much as it belongs to us.

This idea of mutual belonging goes hand in hand with ocean literacy. Ocean literacy is defined as

an understanding of how you impact our ocean and how our ocean impacts you. The word "you" in this definition can be interpreted on various levels, ranging from you as an individual to you as a member of humanity.

The term "ocean literacy" was developed in the early 2000s through a series of collaborative workshops and academic publications involving scientists, educators, and policymakers. The presented ideas were combined to publish the "Ocean Literacy Guide". The most recent version of the Guide outlines seven Essential Principles that all ocean-literate individuals must understand in order to effectively communicate about, and conscientiously choose how to interact with, our ocean.

The National Marine Educators Association and the Lawrence Hall of Science at the University of California, Berkeley developed a series of documents (the Ocean Literacy Framework) that describe in detail how each of the Essential Principles aligns with the Next Generation Science Standards, which are learning standards used by K-12 classroom teachers in the United States. In addition, each principle has a set of Fundamental Concepts to help educators simplify the principles



Essential Principles



- 1 Earth has one big ocean with many features
- 2 The ocean and life in the ocean shape the features of Earth
- 3 The ocean is a major influence on weather and climate
- 4 The ocean makes Earth habitable
- 5 The ocean supports a great diversity of life and ecosystems
- 6 The ocean and humans are inextricably interconnected
- 7 The ocean is largely unexplored

into specific subtopics that can guide their lesson plans. Many of the ocean literacy documents are also available in multiple languages. Making the Ocean Literacy Principles easy to access and incorporate into existing curricula improves ocean learning for all students, thereby broadly increasing ocean literacy. The more ocean-literate people there are, the healthier our relationship with nature will be, and youth can be a driving force for this change.

To get involved, we can engage in citizen science projects such as iNaturalist, which tracks biodiversity, Debris Tracker, which tracks plastic pollution, and eBird, which tracks avian biodiversity. Citizen science projects like these help scientists gather data that can be presented to government officials

and potential funders to gain support for environmental projects. Starting in 2015, students aged 15-17 were invited to complete the International Ocean Literacy Survey, which provided data to help scientists and educators measure ocean literacy levels around the world. Evaluation is a crucial step in any scientific project, and this survey set a precedent for ocean literacy evaluation.

Many international organizations and events also promote ocean literacy for youth. For example, the Students On Ice Foundation (SOI) in Canada hosts annual youth expeditions, particularly to the polar regions, promoting experiential learning for sustainability leadership. Their mission focuses on growth during expeditions and SOI alumni go on to join influential conservation advocacy projects. Several representatives from SOI presented at the 5th International Marine Protected Areas Congress (IMPAC5) in Vancouver, Canada in 2023. The IMPAC5 program featured an unprecedented level of youth involvement, including high youth attendance due to discounted registration fees, a youth professionals committee to advocate for youth participant needs, and a pre-congress professional development program. By creating opportunities for experiential learning, citizen science, advocacy, and professional growth, we can collectively guide youth in developing a strong connection between themselves and the ocean.



Ocean literacy is defined as an understanding of how you impact our ocean and how our ocean impacts you.



MPAs At-a-Glance

As vast and untamed as our ocean is, humanity has tried to set boundaries on it for a long time.

For millennia, western civilization strived to portray ownership on the ocean based on which nations held the greatest influence. In the 1600s, a Dutch jurist (Cornelius van Bynkershoek) came up with the “cannon-shot” rule: a nation had the right to the adjoining waters corresponding to the range of the nation’s weapons. This idea was internationally accepted as the measure of the width of the territorial sea, making everything beyond those national boundaries free to all nations (with a coastline, clearly), but at the same time belonging to none. That became a problem soon enough; this common resource (the sea) was used for each nation’s interest, and since the resource seemed infinite there was often a complete disregard for the environment.

While many Indigenous people have long known how to be stewards of their marine resources, some civilizations desired specific boundaries to clarify management responsibilities. When the United Nations (UN) convened the third Conference on the Law of the Sea, which took place from 1976 to 1982, they aimed to provide “order in the world’s oceans and seas by establishing rules that governed all uses of the oceans and their resources”. By assigning each nation the rights and responsibilities of their continental shelf through the use of the **Exclusive Economic Zone** the UN made the first step toward accountability from each nation. But it wasn’t until 1987 that international law and governments started to explicitly think of future generations (the Brundtland Report) and what they would leave them.

The Exclusive Economic Zone (EEZ) is the area beyond and adjacent to the territorial sea, in which nations have jurisdiction over natural resources.



Image
Sicily, Italy

Fast forward to 2011, when the UN Convention on Biological Diversity set 20 targets for individual countries to address the growing rates of biodiversity loss, known as the Aichi Targets. Target 11 aimed for countries to designate and protect “at least 10% of coastal and marine areas, especially ones with particular importance for biodiversity and ecosystem services” by 2020. In 2014, the International Union for Conservation of Nature (IUCN) World Park Congress recommended increasing the goal to 30% and trying to get it done by 2030. This recommendation was adopted and implemented in one of the 17 Sustainable Development Goals (SDG 14; Life Below Water) that were presented by the UN’s General Assembly in the 2030 Agenda for Sustainable Development. This is commonly known as the 30x30 initiative. In 2022, it was introduced as part of the 23 action-oriented global targets in the Kunming-Montreal Global Biodiversity Framework at the UN Biodiversity Conference (COP 15).

Protecting the ocean has been a recurring theme for thousands of years, and throughout the last century, it has been combined with different ideas of national boundaries. Marine Protected Areas (MPAs) refer to a portion of open ocean or coastal area that has been reserved by law or other means due to the importance of the flora, fauna, historical, or cultural features within; the limits placed upon these areas are meant to restrict human activities to protect part or all of the enclosed environment. The IUCN has established a system of six categories of protection applicable to both marine and terrestrial environments based mainly on what it’s trying to protect:

- ✓ Strict Nature Reserve / Wilderness Area
- ✓ National Park
- ✓ Natural Monument / Feature
- ✓ Habitat / Species Management Area
- ✓ Protected Landscape or Seascape
- ✓ Protected Area
(with sustainable use of natural resources)

Depending on the country, the name of these categories may change but the degree of protection stays more or less the same. You’ll see different examples of this throughout the toolkit.

For the past 50 years, MPAs have been used as the main policy instrument to try to address some of the pressures humanity has placed on marine biodiversity. By designating areas where species can reproduce and grow, we are giving ecosystems a fighting chance to sustain and recover from human impacts. According to National Geographic Education, there are currently more than 16,000 MPAs around the globe. Even if that sounds like a lot, it translates to only 8% of the ocean, and less than 3% of MPAs are fully protected (allowing minimal or no extraction practices such as fishing, mining, or oil and gas development).

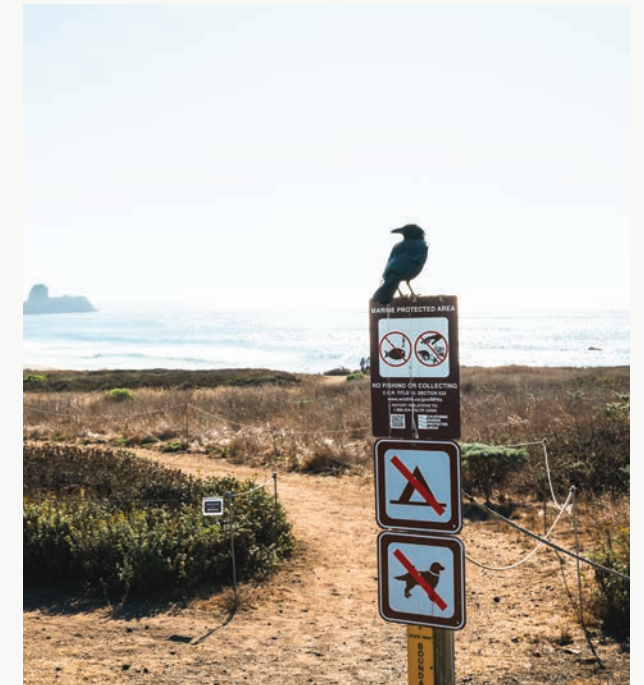


Image
MPA on California Coast

This means 29 million square kilometers are protected in some way by MPAs around the world while the approximate size of our ocean is 363 million square kilometers.

The main concern with MPAs, and other area-based conservation measures, is that they are not something that can happen overnight. Everyone needs to have a seat at the table: local communities, businesses, government officials, scientists, non-government liaisons, and any other person who feels they have a stake in the area. MPA designation requires trust and cooperation since it is a collaborative effort. But most of all it requires time, quite a lot of time; which is a commodity our generation doesn’t seem to have nowadays. And yet, it is something we need to strive for. The good news is that there’s a high probability that organizations and individuals are already striving to protect the coastal zone nearest to you. So, ask around, don’t be shy, and offer your help. There are always things to be done and ways to support MPAs.



Pristine Seas

Dr. Enric Sala is a former university professor who saw himself writing the obituary of ocean life and quit academia to become a full-time conservationist as a National Geographic Explorer in Residence.

He founded and leads Pristine Seas, a project that combines exploration, research, and media to inspire country leaders to protect the ocean's vital places.

Pristine Seas is fueled by the unwavering passion of community-led ocean conservation initiatives, like the inspiring effort of the fishing village of Cabo Pulmo, Mexico – a story of hope and recovery. In 1995, the local fishing community decided to stop fishing and instead establish a marine reserve – they had witnessed how overfishing had ravaged and depleted their ocean, and they took decisive action to conserve it for present and future generations. Hence, with support from the government, scientists at the Universidad Autónoma de Baja California Sur, and from other parts of the country, Cabo Pulmo was declared a Natural Protected Area under Mexican law. During this period, the local fishers embraced new endeavors, such as eco-tourism, as they worked towards their goals. Years later, the results of their efforts are truly remarkable.

The fishing population in their protected area saw a fivefold increase compared to nearby, unprotected areas, setting a record for the most successful marine conservation effort in history. Today, the ocean is teeming with life once more. Schools of fish swim amongst the coral alongside crustaceans, mollusks, and various birds and marine mammals. The coral reef has rebounded, proving that even the most damaged of ecosystems can recover with time and if protected. The story of the fishers of Cabo Pulmo serves as a shining example of what can be achieved when we come to-



Image
Red Snappers

Photo by Enric Sala/National Geographic Pristine Seas

gether to preserve and protect our natural world. This story of recovery sparked the replication of marine reserves in neighboring coastal cities, and today, the Cabo Pulmo National Marine Park is a model for marine conservation success for projects like Pristine Seas.

Since 2008, Pristine Seas has conducted over 35 expeditions and helped inspire the creation of more than 25 Marine Protected Areas (MPAs) covering 6.5 million square kilometers of ocean – an area more than twice the size of India. The



The fishing population in their protected area saw a fivefold increase compared to nearby, unprotected areas, setting a record for the most successful marine conservation effort in history.



Image
Enric in Lake Palau

Photo by Manu San Félix/National Geographic Pristine Seas

Pristine Seas project began with a mission to create MPAs and protect the last remaining wild places in the ocean. It has since grown to become a global effort to explore, study, and restore the ocean. Through scientific expeditions, the project has provided valuable data and insights into the health of the ocean and the impact of human activities on marine life and coastal communities. It is a reminder that the ocean's health is vital for the survival of humanity, and it's a call to action to protect these wild and remote places before it is too late.

The Pristine Seas project is important because it uses its extensive experience, knowledge, and expertise to provide countries and local communities the assistance and support they need to create MPAs and achieve ocean conservation and economic goals. The ocean's health is critical for the survival of humanity, and the creation of MPAs is a necessary step in protecting the ocean and preserving it for future generations. Pristine Seas works with Indigenous people and local commu-

nities to inspire the creation of MPAs because it recognizes that local communities and partners are key to ensuring that the process of creating and managing MPAs is developed with and owned by the community. The project's approach of community-led solutions, effective stakeholder engagement, and leveraging the power of exploration, research, and storytelling are best practices for marine conservation.

Over the next decade, Pristine Seas is on an ambitious mission to support the global target of protecting 30% of the ocean by 2030. They are dedicated to partnering with countries and local communities worldwide to create protected areas that will not only be good for marine life but also good for communities through fisheries benefits, increased food security, and mitigation of climate change – to further help improve the livelihoods of local populations and leave a lasting impact on our planet for generations to come.

Niue



Niue Moana Mahu
Marine Protected Area

Beveridge Reef

South Pacific
Ocean

• EXPLORE AND PROTECT

Niue Moana Mahu

Unique for its single-raised coral atoll, the island of Niue is located between Fiji, Samoa, and Tonga in the South Pacific with its highest point 68 meters above sea level.

Marked by its wide variety of geographical features from craggy coastlines to sharp exposed coral, the island is an assortment of terrific caves, cliffs, vast vistas, and beautiful reefs.

Niue's Exclusive Economic Zone (EEZ) contains several seamounts and three outlying coral reefs, which are at or near the surface. Despite its reputation for shipwrecks due to its hidden reef, the curiosity of intrepid explorers finally led to its exploration in September 2015. The Government of Niue collaborated with Oceans 5 and the National Geographic Society for a Pristine Seas expedition to this uncharted territory to develop a comprehensive study of the area. Their goal was to determine the best wild places in the ocean for the conservation of very rare and unique marine ecosystems that are depleting as a result of commercial fishing and other human impacts.

The deep blue ocean that surrounds the island of Niue is not just a body of water, but a reflection of the rich cultural heritage of its people. For generations, the community has maintained a sacred bond with the ocean, safeguarding its waters with traditional customs and management practices passed down through the ages. The result? A paradise of marine life that continues to flourish today. The people of Niue take pride in being partners in global ocean conservation efforts, and the decision to establish a Marine Protected Area (MPA) was well supported by the local community.

Significant Observations

During the 18-day expedition of Niue, carried out by National Geographic along with its partners, the



Image
Pink Anemone Fish

Photo by Enric Sala/National Geographic Pristine Seas

team made several significant observations that shed light on the diverse marine ecosystems in the region. The water was crystal clear throughout the trip, allowing for unobstructed views of the undersea world. As the crew explored the neighboring reefs surrounding Niue, they discovered a high diversity of marine species. 102 coral species were identified, including 12 rare species, offering insight into the area's biodiversity. Similarly, the researchers documented 295 shallow-water fish species from 41 families. The team also recorded three marine turtle species, including the green sea turtle, loggerhead sea turtle, and hawksbill sea turtle, illustrating the necessity of conservation efforts to safeguard these endangered species.

Finally, many coral species appeared to have small-sized structures, presumably as a consequence of natural disasters such as Cyclone Heta in 2004. This finding sheds light on the resilience of marine ecosystems and their ability to rebound from catastrophic events.



The deep blue ocean that surrounds the island of Niue is not just a body of water, but a reflection of the rich cultural heritage of its people.

Importance of MPAs

The designation and enforcement of MPAs are crucial for preserving Niue's fragile and ecologically significant species. Among these species are the grey reef shark, Blainville's beaked whale, smalltooth sand tiger shark, and flat-tail sea snake, which have found refuge in these waters. However, fishing vessels from seven flagged states have been observed fishing inside Niue's EEZ, adding to the stress on local fish populations.

Niue's waters have been overexploited resulting in some of the lowest fish biomass in the Pacific. To make things worse, climate change is causing oligotrophic zones, which are some of the least productive portions of the ocean, to expand into the boundaries of the reef. Strict enforcement of MPA regulations could help to protect the vital marine ecosystems of Niue, and contribute to the restoration of local fisheries.

The expedition concluded with a detailed proposal from Pristine Seas suggesting the designation of a no-take MPA around Niue. With a recent economic study from the Galapagos Islands suggesting the worth of a live shark is USD 5.4 million to the tourism industry and less than USD 200 for a dead shark, MPA designation benefits Niue by positioning it as a global leader in marine conservation, protecting its EEZ, boosting tourism revenue, and supporting the recovery of fisheries.

Expedition Results

In March 2017, the Pristine Seas team returned to Niue to present the findings of the expedition to the Government of Niue to help map the conser-

vation and sustainable resource management of the island's reefs. The team's recommendations were shared at the Our Ocean Conference in Malta in October 2017, where the Government of Niue announced its commitment to creating a large-scale MPA.

In 2020, the Niue Cabinet took a critical step forward, formalizing the protection of 40% of Niue's EEZ by sanctioning the Niue Moana Mahu MPA, a no-take zone where fishing, seabed mining, and mineral and oil exploration are prohibited. In 2022, Niue's entire EEZ was designated as a multiple-use marine park including five zones with distinct uses. As of 2023, Niue exceeds any existing relevant SDGs, CBD targets, and United Nations Biodiversity Conference action-oriented goals.

Niue is an inspiring example of perseverance and commitment in establishing and protecting one of the largest MPAs in the world. The success of the MPA shows that we can create and protect vital marine ecosystems with determination, political will, and community support and that we must learn from the past to ensure a brighter future. In a world where our ocean faces unprecedented challenges, Niue provides a beacon of hope.

Photo by Phoebe Fitz



• OCEAN ACTIVISM

Shireen Rahimi

interviewed by Julia Lara Navarrete

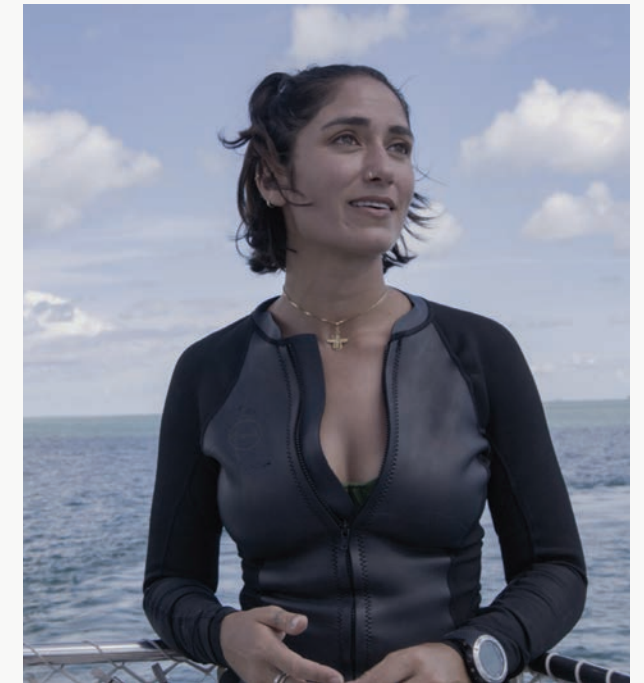
When it comes to telling the story of climate change and its effect on our ocean, I was pretty confident I'd seen it all: scientific articles, social media videos, nonprofit reports, documentaries, and more.

Or at least, I thought I had before I spoke with Dr. Shireen Rahimi, a Marine Anthropologist, Underwater Filmmaker, and National Geographic Explorer. Her film production company Lightpalace is a testament to how the portrayal of natural history in the filmmaking industry has evolved. "I entered a field five years ago that was still very much focused on wildlife and ecosystems as isolated systems, reinforcing this false dichotomy of humans and nature as separate. There is a place for these narratives – I love Planet Earth just as much as the next person. But space is opening up for stories that include the human dimension, that represent how everyday people experience life on this planet."

Shireen uses her filmmaking and photography to help people access something they might not be able to otherwise. With her beautiful takes of marine life and scientific facts, she also mixes in storytelling, folklore, and **traditional ecological knowledge**, which is what has made her work truly stand out. Shireen's creations have been featured in film festivals around the world and in places like The Miami Herald, National Geographic, Sierra Magazine, and The Nature Conservancy.

Traditional ecological knowledge (also known as local ecological knowledge): the evolving knowledge acquired by indigenous or local people specific to a location.

When I asked Shireen why she decided to work with the ocean, she confessed she just wanted to surf. She was studying Environmental Science at Columbia University in New York City and her college provided funding for her to complete a senior thesis anywhere she wanted. "I wasn't



Image

Shireen Rahimi

Photo by Phoebe Fitz

necessarily interested in being a Marine Biologist. But as I went along, I realized that I really loved working with the ocean because it's a very dynamic system. And the changes that are happening within affect our lives in ways that we can't even imagine." She started working with fisheries in Chile, then moved to the Caribbean to study coral reefs in Cuba, and eventually ended up obtaining her Ph.D. while working with spearfishers in the Bahamas.

She has used photography and video, above and below water, as her form of data collection for multiple projects in the past eight years. In 2018, she received a grant from National Geographic to do a short film and photo essay on the difference between coral reefs in Cuba and Florida. The funding allowed her to buy underwater camera housing, and the rest, as they say, was history. She started Lightpalace in 2020 and has been running the company full-time ever since. In 2023, Shireen received another grant from National Geographic to continue her work in Mo'orea French Polynesia,

looking at the impact of freshwater pollution on coral reefs and local communities. As I talked with Shireen, I repeatedly noticed how inspired she is that the field is changing; *“it’s changing to better reflect the fact that our lives and the lives of animals and ecosystems are tightly intertwined; that our fates are actually co-determined.”*

Her work aims to reflect the diversity of people who interact with the natural world, even when environmental media has come traditionally from a certain type of background. *“It’s not just scientists from the Global North who know things; it’s women from Mexico and Iran, it’s lots of different types of people that have stories and have really in-depth knowledge which goes back centuries and generations.”* To Shireen, it’s not that environmental media has to leave behind science, but it’s about giving traditional knowledge the same amount of importance. *“I feel like environmental media has drawn in a very specific type of audience, which are the ones already open to ideas like conservation and environmental activism. And that’s great but I feel that at the same time, we need to draw other audiences into the conversation.”*

And it is within this change that Shireen’s work builds up, engaging people outside of ocean activism. With her new film *“Letter from the Age of Ecocide”* she explores eco-anxiety through ancient Farsi poetry and uses music and movement to tie it all together. Dedicated to the women in Iran, her homeland, this love letter to the planet has already won awards and started conversations. This is the first film in her body of work that isn’t a documentary, and in her own words *“it’s an attempt of putting forward the kind of work that is needed to engage people with other skill sets that can contribute to the movement.”* According to Shireen, *“we need people who create culture because they*

are the ones that move things forward in ways politicians and scientists can’t.” By bringing in diverse perspectives, she is hoping to open the field of ocean conservation, helping other types of storytellers to feel like they have a place in the movement. *“Everyone loves the ocean! It’s deeply tied to our inner souls. And we all have a stake in the continuation of our planet.”*



I love Planet Earth just as much as the next person. But space is opening up for stories that include the human dimension, that represent how everyday people experience life on this planet.

Ocean activism reminds me of the Greek myth of Sisyphus. So, when I asked Shireen how she manages to strike a balance between factual information and ocean optimism, she was incredibly candid about it. *“Optimism is a muscle that you develop, it’s really something you practice at.”* She told me it’s a habit, in terms of recognizing the negativity and choosing to focus on the positive. *“I’m constantly trying my best to acknowledge the negative and the pain and the suffering, but to also intently focus on the bright spots we have left.”* And I think that’s something we should all strive for. Because working with and for the ocean is going to be rough, we’re going to have setbacks. Optimism is just a habit we have to practice. This type of persistent optimism is something Shireen uses to keep her going. *“Because even when we lose an ecosystem there’s always going to be the chance that we can restore it.”* It’s all about **resilience** and recovery; focusing on the local impact. Because little by little, those local impacts can become whole ecosystems and maybe, eventually, we can even see the world as recovered.

Resilience is the ability of an ecosystem to maintain its state after being subjected to stress caused by a disturbance.



Franz Josef Land

Arctic Sea

Russian Arctic National Park

RUSSIA

• EXPLORE AND PROTECT

Franz Josef Land

Imagine a world of ice, where walruses, polar bears, and other arctic creatures thrive.

The northernmost land in Eurasia and the world's northernmost islands, Franz Josef Land is an uninhabited archipelago in the Arctic Ocean. It forms the northern island cluster of the Russian Arctic National Park, Russia's largest National Park. The Pomors, an ethnographic group living on the coast of the White Sea, called the northern tip of the southern island cluster "income", indicating a point where travelers should "come in" due to dangerous travel. Franz Josef Land is roughly 740 kilometers past this point of no return. Thus, visits are limited to infrequent scientific expeditions and professional summer tourist cruises.

Being an island chain, the creatures that call Franz Josef Land home are restricted in range by their swimming endurance. With many of the animal inhabitants trapped inside, and human inhabitants blocked out, Franz Josef Land is a unique, enclosed ecosystem relying precariously on shifting ice levels.

During the summer of 2013, an international team of field biologists and filmmakers from National Geographic Pristine Seas, the Russian Arctic National Park, and the Russian Geographical Society traveled to Franz Josef Land. The professionals varied widely in their specialties, studying



I work in the Arctic because I innately feel it's my home—and because I hate heat and mosquitoes! I somewhat hide from aggressive civilization among friendly ice and glaciers.

— Dr. Maria Gavrilov, Deputy Director for Research at the Russian Arctic National Park and Expedition Co-leader



Image
Arctic Sea Ice

Photo by Manu San Félix/National Geographic Pristine Seas

everything from tiny microalgae to large walruses. Through this multidisciplinary research tactic, the team hoped to comprehensively assess the state of the ecosystem compared to previous historical studies.

While the team experienced many wondrous wildlife encounters, including an increase in endangered bowhead whale sightings and some close calls with polar bears, they were shocked by how little ice there was. The 2013 expedition provided a snapshot in time of the biological state of Franz Josef Land. This snapshot will hopefully provide a useful comparison point for future expeditions to determine the effects of climate change and ice melt on the ecosystem.

Partially due to this concerning discovery, in August 2016, the Russian government expanded the Russian Arctic National Park to include the

Franz Josef Land Natural Reserve. This was seen as a powerful statement in taking initiative toward ocean conservation through the designation of Marine Protected Areas. However, the biggest threats to Franz Josef Land are not located within the remote National Park, but within the world's populated areas through greenhouse gas emissions and the resulting warming effect. While the park expansion was a powerful and successful step, it was only one step on a long conservation journey.

In an interview, Dr. Enric Sala, National Geographic Explorer-in-Residence, Expedition Co-leader, and founder of Pristine Seas commented on this journey; "exploring these places and helping to preserve them gives me hope... being able to see what Earth could be like is the only thing that keeps me going". Exploration of remote regions like Franz Josef Land simultaneously highlights what we risk losing and reveals a potential for healing. Enriconce felt like he was "writing the obituary of the ocean", but thanks to exploration, he can now write the future of ocean life.



Image
Polar Bears in Pikialasorsuaq

Photo by Manu San Félix/National Geographic Pristine Seas

Different Ecosystems, Different MPAs

What are the different types of MPAs?

While there are different levels of protection, there are also different types and names for Marine Protected Areas (MPAs) in different countries, and sometimes even within the same country. Some MPAs are in permanent effect to provide continuous protection to a particular species, or heritage site, such as National Parks. Other MPAs are seasonal, to provide protection during spawning, breeding, or feeding periods. MPAs can sometimes be composed of different zones, and require permits to use them. Many MPAs provide education programs for coastal users, to ensure responsible visitation.

MPA Examples

- ✓ Marine sanctuaries
- ✓ Wildlife refuges
- ✓ Fisheries closures
- ✓ State parks
- ✓ Conservation areas

How are they managed?

Sustaining and managing MPAs can be difficult, due to various socio-political factors. Each MPA requires different management techniques in order to be considered effective based on the local ecosystem. Unfortunately, while some MPAs have been designated successfully, protection may not be implemented in that area. This lack of enforcement creates what is known as a “paper park”, or a park that has rules and regulations only on paper,

First defined in a 1999 World Bank report, a paper park is a legally established protected area where experts believe current protection activities are insufficient to halt degradation.

but not necessarily followed, where biodiversity does not benefit, despite the MPA status. MPA governing bodies may include:

- 1 **Government-led**
- 2 **Decentralized**
(governed by the state and private organizations)
- 3 **Community-led**
(governed by local communities collectively)
- 4 **Private**
(governed by the private sector and/or Non-Governmental Organizations)

For any governing body, management strategies must be established early on in the designation process. Any laws that are enacted should be able to adapt to and evolve with the development of both science and community needs, as well as established treaties and legislation. For example, some MPAs are managed through the prohibition of specific fishing methods, such as bottom-trawling, and others are managed through the introduction of MPAs during breeding seasons. The latter may ensure that fish are given a chance to produce offspring, maintaining a healthy ecosystem and allowing fish stocks to replenish. Other MPAs allow certain types of fishing practices year-round.



Each MPA requires different management techniques in order to be considered effective based on the local ecosystem.

Local community engagement can be an effective way of managing some MPAs. According to the UK SEAS Project, local communities can ensure

that any management decisions are realistic, inclusive, and sustainable. This is through the application of local knowledge, expertise, passion, and a willingness from governing bodies to decentralize management decision processes, such that communities are allowed to retain ownership of their local resources. However, to do this effectively, community members must be able to see the relevance of the issue at hand, which can create a desire to conserve the area.

How are local communities engaged?

Communities may be informed of any new protections to a local area through public meetings, social media, and signage. However, interestingly, this can lead to unwanted awareness of the species or artifact being protected by the MPA. Marine artifacts such as shipwrecks, for example, may be too vulnerable to withstand wide public knowledge. Educational signage may instead raise awareness of the MPA but not specify why it exists or instead redirect visitors to a similar, but less vulnerable attraction. Other more direct ways of public education may involve educational visits to schools, citizen science programs, and speaker events. The community may also be involved with active patrolling and reporting of any disturbances to the area, as well as communicating with user groups of the MPA.

What difficulties do they face?

While local communities can be hugely beneficial in MPA management, some instances can make their involvement more difficult. The MPA itself will need clear boundaries, to ensure that local community members do not accidentally enter the zone or violate MPA regulations. This also extends to the education of tourists who may be unaware of the MPA and may inadvertently put species or artifacts at risk.

Community members may also have goals that directly or indirectly conflict with the goals of the MPA, which can make it difficult to balance con-



Image
Interacting with MPAs

servation requirements alongside the needs of the community. MPA education should always take the concerns and values of the community into careful consideration, which in turn will be more effective for engaging the audience of that particular community. It is also important that education is an ongoing part of MPA management to ensure any new community members are aware of the MPA, and to reduce the spread of misinformation.



• MARINE MANAGEMENT AROUND THE WORLD

Chumbe Island Coral Reef Sanctuary

The Indian Ocean is vast and diverse encompassing the Red Sea and the Persian Gulf, making it the third-largest ocean basin on Earth.

Spanning almost 20% of the Earth's total water surface, the Indian Ocean is a vital source of natural resources, shipping routes, and cultural exchange. However, despite its importance, the Indian Ocean is one of the least explored areas on Earth.

The Western Indian Ocean (WIO) region, in particular, is home to a diverse array of cultures, ethnic groups, and natural resources. The WIO region stretches over 15,000 kilometers and includes ten countries, five of which are island states. The combined population of the WIO region is 244 million,

and the ten countries in the region are Contracting Parties to the Nairobi Convention for the protection, management, and development of the coastal and marine environment.

Unfortunately, the WIO region is facing a number of challenges, including rapid urbanization, increased population growth, declining fish stocks, sea level rise and flooding, and habitat degradation. These challenges have led to the creation of Marine Protected Areas (MPAs) in the region, which are commonly referred to as “the national parks of the ocean.”

Chumbe Island is a small island located off the coast of Zanzibar, Tanzania. It is known for being one of the most successful MPAs in the WIO region and serves as a case study for the positive impact MPAs can have on marine wildlife and coastal communities. In 1994, after extensive community consultations and negotiations with government authorities, Chumbe Island was

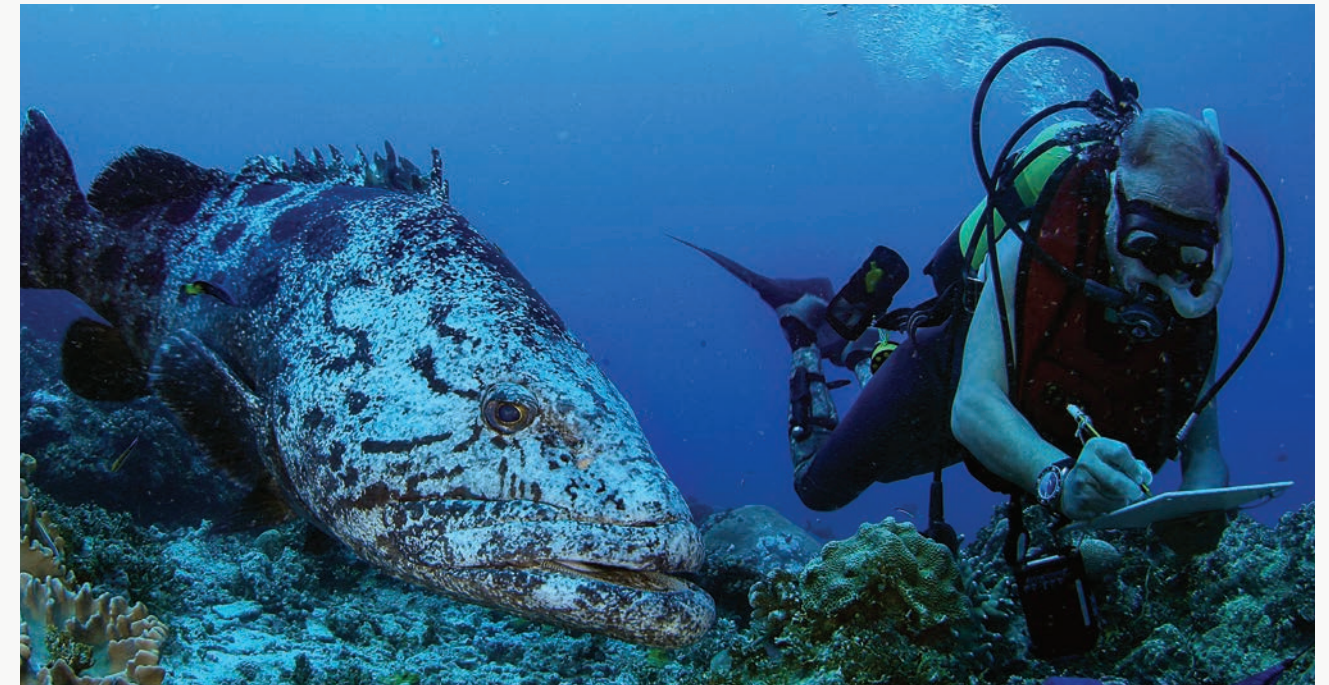


Image
Potato Grouper

Photo by Manu San Félix/National Geographic Pristine Seas



Image
Chumbe Island

officially declared the first MPA in Tanzania, establishing the Chumbe Island Coral Reef Sanctuary and Forest Reserve. The designation process for the Chumbe Island MPA was unique in that it involved a large-scale, community-based approach involving residents, neighboring communities, local leaders, and negotiations with seven government ministries. The park was designed to protect the coral reefs and diverse marine life on the Western side of the island, as well as the coral rag forest and mangrove ecosystems on the island.

Following the designation of the MPA, the non-profit organization Chumbe Island Coral Park was established to oversee the sustainable management of this area for generations to come. In 1998, they opened an “Ecolodge” in the park to generate revenue for MPA management, and this made Chumbe the first financially self-sustaining MPA in the world. Research has shown that this MPA has been successful in protecting rare and endangered species, sequestering carbon, and engaging the local community. These achievements can serve

as inspiration for other MPAs in the WIO region and elsewhere to strive for.

Overall, progress in the WIO has been significant, with 143 total MPAs declared by various countries in the region, covering an area of 553,163 square kilometers. However, there is still much work to be done to fully achieve the Global Biodiversity Framework Targets. A pathway forward includes localized solutions and interventions, such as **Locally Managed Marine Areas**, as well as striking a balance between scientific expertise and traditional knowledge/practices. Additionally, increasing global ambition, investment, and urgency is essential for the continued success of MPAs in the WIO region and worldwide.

Locally Managed Marine Areas (LMMAs) are zones that are largely or wholly managed by coastal communities to help protect fisheries and safeguard biodiversity.



The Arnavon Islands are located in the South Pacific and make up one of the 992 Solomon Islands.

Of the 992 islands, 147 are inhabited, leaving 845 uninhabited islands that make up the largest nesting ground for hawksbill sea turtles in the South Pacific. In response to declining sea turtle populations in the region, the Solomon Islands government declared the Arnavon Islands a sanctuary in 1976. Due to continued community efforts from 1991-1995, it was designated a Marine Protected Area (MPA) under the name Arnavon Community Marine Conservation Area. In 2017, the area was upgraded once more to the Arnavon Community Marine Park, which covers an area of almost 170 square kilometers. This status was awarded by the Marine Conservation Institute and its protection level is described as an “area that prohibits or strictly restricts extractive activities, minimizing impact to the extent possible”.

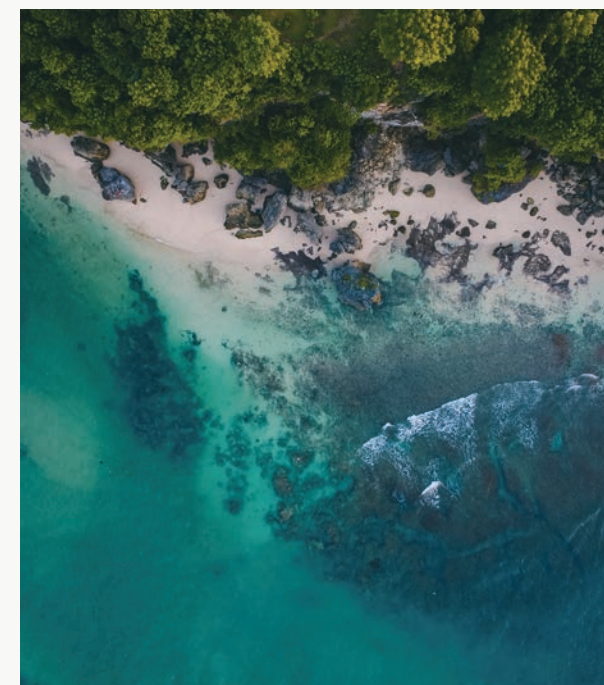


Image
Beach in the South Pacific

Process



Determining Marine Park status

- 1 The area was nominated by members of the Kia, Katupika, and Waghena communities, alongside the local government, to protect sea turtle populations, as well as coral reefs, marine and bird species, and cultural heritage sites.
- 2 The area was evaluated via a report which was collated by managers of the MPA and community members, then evaluated by experts.
- 3 A council of experts from all over the world discussed the information and ultimately determined to award the status of Marine Park.
- 4 An audit is conducted every five years by the Marine Conservation Institute to reevaluate the park.

This designation also provides access to financial support to oversee the park, as well as official laws to protect the turtles, giving the Park Rangers legal power to arrest and prosecute any poachers. This became the country’s first Marine Park in history.

The area is managed by the Arnavon Community Marine Park Management Committee, a group composed of Indigenous leaders from the Kia, Katupika, and Waghena communities. The inclusion of Indigenous leaders ensures that the protection of this area complements the values and requirements of Indigenous communities and that conservation efforts are more effective. After the inception of the park, locals commented that sea turtle populations have increased. The area also protects sea cucumbers, pearl shells, sharks, and

• **MARINE MANAGEMENT AROUND THE WORLD**

Arnavon Community Marine Park

sea snails, whose numbers also increased after the introduction of the Marine Park.

The Arnavon Community Marine Park is highly valued by the surrounding communities and knowledge of its conservation is being passed down to younger generations. Originally the Marine Park was managed by only male rangers, who spent months at a time protecting the turtle nests from both poachers and predators, and it wasn't until 2016 that women were allowed to participate in these conservation efforts. Two incredible women, Marilyn Gedi (the first female police officer in the Solomon Islands) and Robyn James (The Nature Conservancy) decided to form the KAWAKI Women's Network to empower women from across the Solomon Islands to partake in conservation efforts in their communities. The women also conduct educational activities and provide opportunities for local children and families to get involved. Now, due to whole community involvement, residents can better engage with sea turtle conservation ef-



The inclusion of Indigenous leaders ensures that the protection of this area complements the values and requirements of Indigenous communities and that conservation efforts are more effective.

forts and benefit from eco-tourism, which provides revenue to support the communities themselves.

Programs such as these have been adopted by neighboring communities and their messages of conservation have reached over 13,000 people – inspiring work from the KAWAKI Women's Network. The network is now looking into creating the country's first women-led eco-tourism initiative to offer training to women and girls, as well as continuing their work as educators. Incredible women, with incredible power to change the world.



Image
Hawksbill Sea Turtle Hatchling



• MARINE MANAGEMENT AROUND THE WORLD
Paliton Marine Sanctuary

According to Tagalog folklore, when the world first began there was no land, just the sea and the sky.

A great earthquake shook with such force that out of the deepest part of the ocean arose the islands that are now known as the Philippines. This 7,100-island-long archipelago located between the South China Sea and the Pacific Ocean contains some of the greatest marine biodiversity in the world. It lies within the Coral Triangle, which encompasses one of the world's eight major coral reef zones and thus is a global priority for conservation. For the past 50 years, the world has kept a close eye on the Philippines; the conservation of its marine resources is critical to the health of global marine biodiversity and to its own people. With almost 9% of the total area of coral reefs worldwide found here, these reefs “provide direct food security and livelihoods to one-third of the

Tagalog is the largest ethnolinguistic group in the Philippines.

population in the Philippines” (Panga et al., 2021). And the people of the Philippines have responded accordingly. You read that right, the people.

The Philippines have provided leadership on how to set up and effectively manage Marine Protected Areas (MPAs) since 1940 when the country established its first MPA, Hundred Islands National Park. Since then, the Philippines have provided many successful examples of localized and national approaches to MPA management. There are over 1,500 MPAs declared under local municipal and city governments and about 36 MPAs declared by the national government, which are all part of a national MPA database. Through the evaluation system of this database, which documents biophysical information and trends in the area, the country has created a social and institutional network of MPAs. Moving from focusing on individual MPAs to a network system provides countries with the



Image
Paliton Marine Sanctuary Information Center

opportunity to achieve conservation goals more effectively since they can protect species that move across different areas during their life cycle; it also provides space for stakeholder engagement in MPA management.

Since the 1970s, most MPAs in the Philippines have been established through community-based initiatives. For example, the communities in Sumilon and Apo Islands, with the help of local conservation organizations and scientists, recognized the need to protect their marine resources. The communities were encouraged to pinpoint nursery sites that fishers were willing to make no-take zones, to allow fish and coral communities to restock; also because of their potential as sites for tourism-related activities that would bring more income. The success of these small no-take marine reserves served as a template for the expansion of the community-based approach to establishing MPAs across the country.

This approach has become popular due to success stories spread through word-of-mouth and, in

some cases, informal learning exchanges among communities and local government officials (sometimes referred to as *talanoa*). MPAs in the Philippines are supported by funding provided by the national government, international donors, and local governments that partner with nonprofit organizations. However, once an area has been selected for protection, it's usually the community that assumes the responsibility of implementation, monitoring, and enforcement. In most cases, the communities work closely with their local government so that their efforts are officially recognized and so they can receive assistance in the event of any enforcement issues.



Since the 1970s, most MPAs in the Philippines have been established through community-based initiatives.



Image
Community Members in San Juan, Siquijor

One of the success stories in this region is Paliton Marine Sanctuary, within San Juan Province on Siquijor Island, which was established in 2008 after several years of consultation with the local community. Once the MPA was designated by municipal ordinance, the community in the San Juan Municipality created a Marine Management Committee to attend to the management needs of the sanctuary. One of the Committee's main goals is to help develop measures of assurance against the environmental degradation that has been seen in other areas of the Coral Triangle. With the help of the Ilak Fisherfolk Association, the area is managed so that they can issue penalties and collect fees since the Paliton Marine Sanctuary is a very popular site for recreational diving. To date, the Paliton Marine Sanctuary earns the highest revenue among the 21 MPAs in San Juan Province. In 2016 it won the title of "Most Popular MPA to Eco-tourism" by the Isla de Fuego MPA Awards in recognition of the way the Fisherfolk Association and the Committee have been collaboratively managing the area.

The community has been working to preserve the colorful hard coral cover within the MPA, so much so that there are now scientific studies showing the impact of the protection. These studies indicate that coral cover has increased within the Paliton Sanctuary, while in areas outside the MPA, coral cover has been slowly degrading over time. There's been no indication that the density of fish within the sanctuary and outside of it are statistically different, which has made some believe the protection in the area needs to be strengthened or that the MPA should limit fishing near its boundaries. Others believe that a **carrying capacity** study is necessary to measure the impact of recreational diving on fish populations. The fact that they haven't seen differences in fish density within and outside the MPA could also be due to

Carrying capacity is the maximum population size of a certain species that can be sustained in a specific environment.



Map
Paliton Marine Sanctuary

"chlorine fishing": a widely used, illegal practice where bleach is poured onto the reefs creating a chemical reaction that indiscriminately kills any marine organism in the vicinity. This has been seen much more around Siquijor Island in recent years. Organizations such as the Coastal Conservation and Education Foundation, the Siquijor Province Bantay Dagat Task Force, and the Ilak Fisherfolk Association are trying to eradicate this harmful practice using various approaches. Working with communities that are struggling to adapt to climate change is also a critical priority. If we aspire to keep up with the ambitious targets we've put in place to protect our ocean, local communities must take center stage.



• OCEAN ACTIVISM

Fernando Bretos

interviewed by Summer Snell

I don't think I've ever felt more inspired after finishing a meeting.

Those were the first words I said aloud after meeting with Fernando Bretos, a Program Officer at The Ocean Foundation and a National Geographic Explorer. Based in Durham, North Carolina in the United States, Fernando took time out of his busy schedule to talk with me, and we had an inspiring conversation full of hope and optimism for our future.

From the minute the interview began, I could sense Fernando's energy for his work. He admitted that he does his work purely because of his passion. He told me the ocean "runs through [his] veins" and that his greatest desire is to connect others with the ocean. As Jacques Cousteau famously said, "people protect what they love".

Connecting marginalized communities and teaching them to love the ocean sounds like a daunting task, so we moved on to my next question where I asked what challenges Fernando faces in achieving this goal. He told me that when he was younger, he thought conservation would be all about working with nature, as in living in a forest like a hermit. Growing up, he came to realize that protecting our home required working with people. He also realized how important it is to project the voice of marginalized communities. He leaned forward in his chair and explained that "conservation is everyone's responsibility".

While some measure success in numbers, Fernando measures his success in "the people [I've] helped". After asking what his proudest achievement is, he smiled and told me about the opportunities he's provided for early-career and aspiring marine scientists. Fernando told me that he is but a "small drop in a big ocean" and that saving our ocean requires the combined effort of everyone – because we are all intrinsically connected to the ocean. Fernando has worked with coastal communities around the world to advocate for the importance of Marine Protected Areas, and he



Map
Xcalak Reefs National Park

also works with volunteers and empowers them to take part in habitat restoration projects. Since 2007, he has helped 15,000 volunteers take ownership of their local environment in Virginia Key off the east coast of Miami, Florida by planting over



Image
Community Members in Xcalak, Mexico

35,000 native dune and mangrove plants. Engaging local volunteers ensured that the project was much more efficient and personal. As Fernando says, people-power can "get it done".

Another example of the power of community is a project run by the Center for Research and Advanced Studies of the National Polytechnic Institute and the National Autonomous University of Mexico at Xcalak Reefs National Park. Xcalak is a remote coastal community that is considered the last town in the Mexican Caribbean not to be impacted by large-scale tourism. To conserve this area, community members petitioned to create a national park which was established in 2003. Due to the construction of coastal roads, Xcalak's mangroves have been largely cut off from the sea but thankfully they are working to dredge these areas

Fernando told me that he is but a "small drop in a big ocean" and that saving our ocean requires the combined effort of everyone – because we are all intrinsically connected to the ocean.

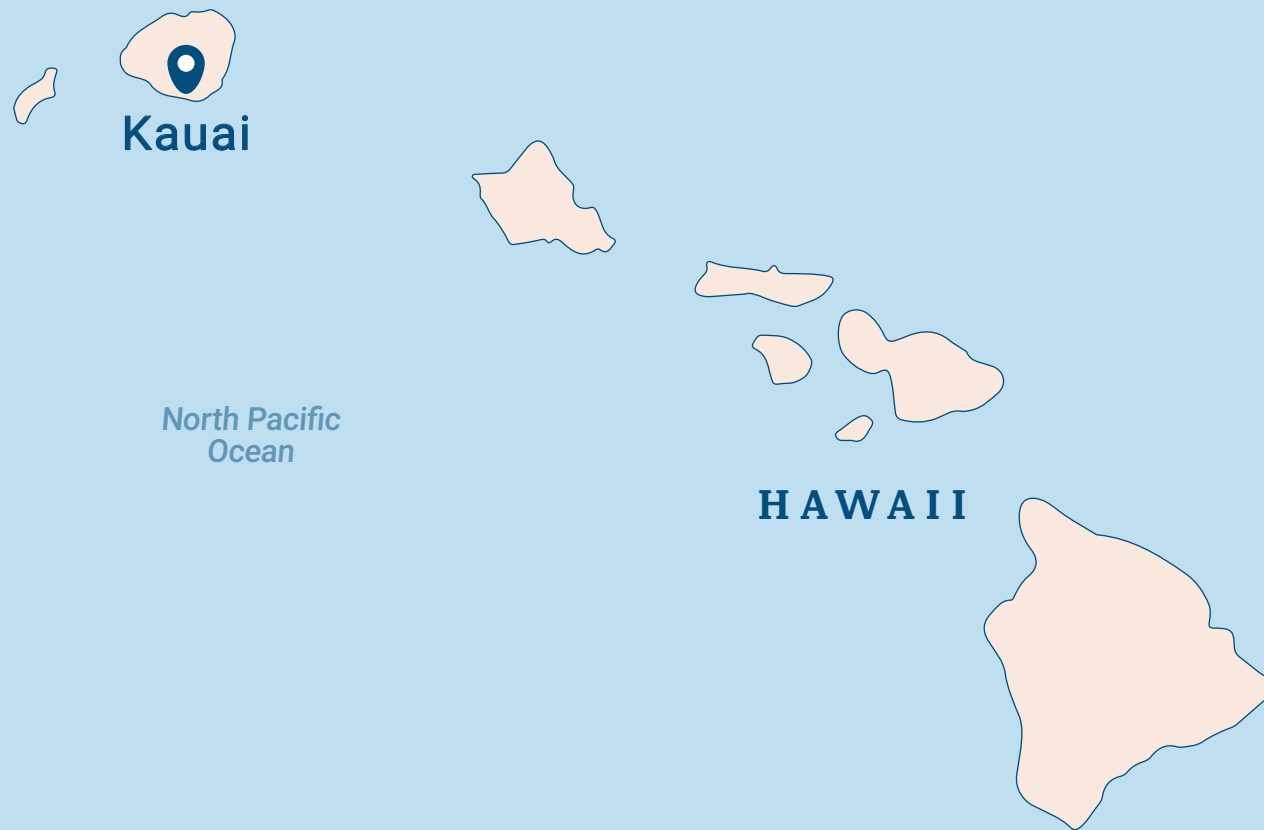
to restore water flow and bring their essential mangroves back to life.

All of his work comes from an inbuilt drive that Fernando has, that is with him "from the second [I] wake up." He feels inspired to "stand up for local communities" affected by the climate crisis and environmental issues, and to "help people that may not be able to help themselves". He is also inspired by the power that every person has to change the world.

We finished the interview with one of the most important questions, a question that reminds us that we can all aspire to be ocean heroes: what is your favorite sea creature, and why? Fernando told me that he loves green sea turtles because they're highly evolved and when they exit the water to lay eggs we can glimpse into their extraordinary lives.

During our conversation about his community-led habitat restoration work, Fernando revealed another one of his favorite aquatic organisms, and it isn't an animal. Instead, it's mangroves. His eyes lit up as he explained how they are an incredibly unique plant; by creating their own ecosystems consisting of avian, terrestrial, and underwater habitats, they create a refuge for many endangered species. These beautiful trees reduce coastal erosion, as well as provide habitats for a third of all marine species during their juvenile stage of life. He told me that if you're ever flying over Miami, Florida, try to look out the window over Virginia Key and you'll see a beautiful mangrove forest and dune that was planted by 15,000 local volunteers and is giving some threatened animal species a chance at survival.

Fernando's final words of inspiration were simple; he reminds us that "we are part of nature" and we are "running out of time" to protect our blue planet.



• MARINE MANAGEMENT AROUND THE WORLD

Hā'ena Community Based Subsistence Fishing Area

The islands of Hawaii have vast and varied landscapes including stunning volcanoes, lush rainforests, and some of the most beautiful beaches that exist on the planet.

Every year millions of tourists visit to enjoy the scenic beauty and the unique fauna that inhabits Hawaii's coastline. Yet Hawaii's marine environment continues to face threats from climate change, overfishing, and pollution. Recognizing the importance of protecting its waters, the state and federal governments have established several conservation tools to protect the islands. Among these tools is the Papahānaumokuākea Marine National Monument, protecting a staggering 1,508,870 square kilometers of the Pacific Ocean. Managed jointly by four co-trustees – the Department of Commerce, the Department of the Interior, the State of Hawai'i, and the Office of Hawaiian

Affairs – this protected area is a chain of uninhabited islands, atolls, and reefs that offer protection to many endangered and threatened species such as green sea turtles, Hawaiian monk seals, and Laysan albatrosses.

In addition to government conservation tools, in areas where legislation, official recognition, or full protection is not possible, people and communities have developed their own methods to protect local waters. One example of community-led protection efforts can be seen in the Community-Based Subsistence Fishing Area (CBSFA) of Hā'ena, on the island of Kauai, Hawaii. Established by the Hui Maka'āinana o Makana, a nonprofit organization formed in 1998, Hā'ena is the first CBSFA in Hawaii to establish regional guidelines for sustainably managing coastal resources based on traditional knowledge. This thousand-acre hugely successful CBSFA was the first of its kind to be signed into legislation in 2014. Since then, two additional CBSFAs have been established in the region.



Image
Coral Reef in Hawaii

Nestled amidst the expansive Hawaiian **Large Marine Ecosystem**, the Hā'ena CBSFA is host to several vibrant and awe-inspiring ecosystems. It houses over 85% of the coral reef area of the United States and is home to beautiful fish including the Moorish idol, butterflyfish, surgeonfish, and anthias. Accredited and working closely with several partners and state agencies, the CBSFA ensures best practices for monitoring, enforcement, research, education, and outreach.

Large Marine Ecosystems are regions of the ocean that encompass coastal areas from river basins and estuaries to the seaward boundaries of continental shelves and the outer margins of major ocean current systems.

History

Community-driven action to protect the ocean has been prominent in Indigenous Hawaiian communities for centuries. The Hā'ena community worships the *Kanaloa akua*, an ocean deity symbolized by the squid or the octopus. Wasting is considered both an insult to akua and an irresponsible act. The importance of conserving ocean resources has been passed down through generations in the form of stories. *Kapuna* (elders) caution the next generation not to take more than is needed and to leave something behind for others. The Indigenous people were aware that human impacts take the largest toll on marine life. Various strategies, such as limiting the catch of some fish species and providing resting seasons coinciding with spawning cycles, have been used to maintain balance. Penalties are imposed on fishers who violate the rules. Thus awareness about protecting and respecting ancestral fishing areas is prominent in local fishing communities.

Limitations

The Hā'ena CBSFA has implemented various regulations, prohibitions, and limits for specific species to maintain a balanced ecosystem while



Map
Kauai, Hawaii

also supporting artisanal fishing. With penalties imposed on those who break the rules, activities such as commercial harvesting of marine resources, feeding fish, and using fishing gear for harvesting are prohibited. Following regional practices, harvesting only a limited number of lobsters, urchins, octopuses, and shells is allowed. The Makua Pu uhonua refuge area within the CBSFA has further restrictions; fishing and entry without a permit are strictly prohibited.

However, not all is off-limits in this underwater wonderland. Local fishermen are permitted to harvest invasive species that can upset the natural balance of the ecosystem. They can also collect unlimited invasive *limu* (seaweed) by hand.

Outcomes

The CBSFA structure allows the community to actively manage biological diversity within the area, leading to increases in species abundance and



Image
Hawaiian Monk Seal

biomass. A 2019 study indicated that coral reefs within the CBSFA experienced a slight increase in biomass, whereas reefs outside the CBSFA experienced a record decline. Greater fish diversity was recorded within the CBSFA compared to outside its borders, including 32 key species listed as culturally significant by the community. Waters outside the CBSFA also experienced a higher density of **invasive species**.

An invasive species is a non-native species that causes harm to a natural ecosystem.

Through careful implementation and thoughtful guidelines, Hā'ena's CBSFA has brought a multitude of benefits to the area, including increased employment opportunities, fish catch, and conservation efforts. Moreover, the CBSFA has brought about a renewed focus on coral restoration in response to the management guidelines. These guidelines have also established rest areas for

fish, which are safe havens where fish can thrive without interference from fishing or tourism activities. Canoe race boundaries have also been adjusted to minimize any disruption to fish nurseries, demonstrating the careful attention and consideration given to maintaining a healthy and balanced ecosystem.

The Hā'ena CBSFA supports traditional fishing practices, ensuring the sustainable use of marine resources for future generations. With its regulations and prohibitions, the ecosystem is thriving, and the waters swarm with biodiversity, providing a glimpse into the intricate web of marine life. The CBSFA is a testament to the delicate balance between man and nature and demonstrates how community-driven conservation efforts can lead to positive outcomes for both people and the environment.



• MARINE MANAGEMENT AROUND THE WORLD

Gwaii Haanas National Marine Conservation Area Reserve

Gwaii Haanas is a Marine Protected Area (MPA) known for its beautifully biodiverse landscape and unique co-management system between the Government of Canada and the Council of the Haida Nation.

The Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site, or Gwaii Haanas for short, consists of the southern 15% of Haida Gwaii, a group of islands located off the coast of British Columbia, Canada. The island group, known as an archipelago, is part of a mountain range formed by tectonic movement.

With many abrupt changes in slope and elevation, Gwaii Haanas protects a wide variety of biodiverse habitats. The marine borders protect 20 species of cetaceans, including minke whales, harbor porpoises, pacific white-sided dolphins, and migrational gray and humpback whales. Haida Gwaii marks the northernmost range of the critically endangered southern resident orcas and also protects other types of orcas. Sea otters once lived around Haida Gwaii and are beginning to return to the area after being hunted to near extinction. The coastal habitats cater to an astounding 750,000 migratory and nesting seabirds, including Cassin’s auklets, rhinoceros auklets, storm petrels, pigeon guillemots, and endangered ancient murrelets. The freshwater (rivers/streams) and wetland (lakes/ponds) ecosystems provide spawning habitat for salmon, which is a keystone species.

A majority of Gwaii Haanas consists of forest habitats, including Pacific temperate rainforests. Several forest fauna species were introduced, including black-tailed deer, raccoons, squirrels, beaver, and rats, though many other subspecies are endemic including the northern saw-whet owl, Queen Charlotte hairy woodpecker, and Peale’s peregrine falcon. At the highest elevation, the alpine

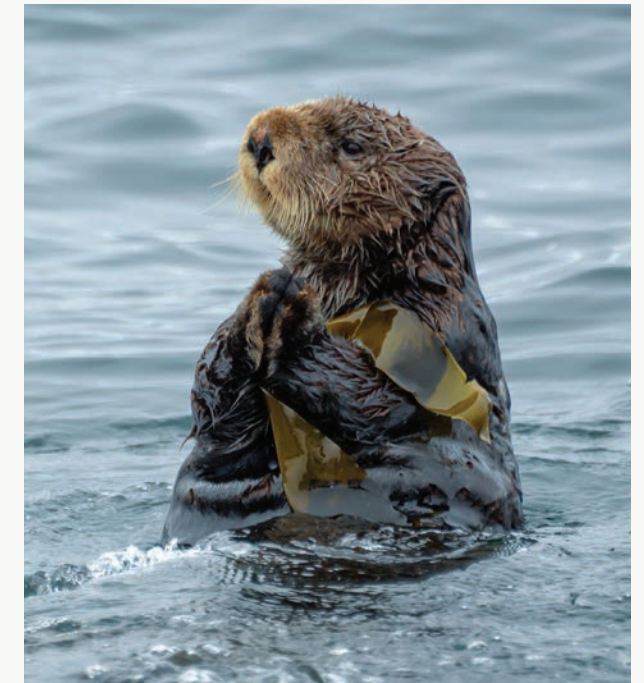


Image
Sea Otter in Canada

tundra is a relatively inhospitable habitat where shorter plants like herbs, grasses, and flowering saxifrages can thrive. This habitat biodiversity allowed Gwaii Haanas to become one of the only areas in the world to be protected from seafloor to mountain top.

“Gwaii Haanas”, formerly known as the Queen Charlotte Islands, translates to “islands of beauty” in the Haida language. Haida Gwaii has been inhabited for over 12,000 years, providing abundant resources for a rich cultural heritage. Decimated by disease and cultural appropriation, the Haida were separated from their land while its resources were exploited by industrial activity including fur trade, whaling, mining, and logging. In the late 1900s, Haida citizens volunteered to guard their village sites and forests, resulting in civil disobedience protests and the designation as a Haida heritage site by the Haida Nation. A series of groundbreaking agreement documents, designations, and management plans established a unique cooperative management system.



Image
Gwaii Haanas

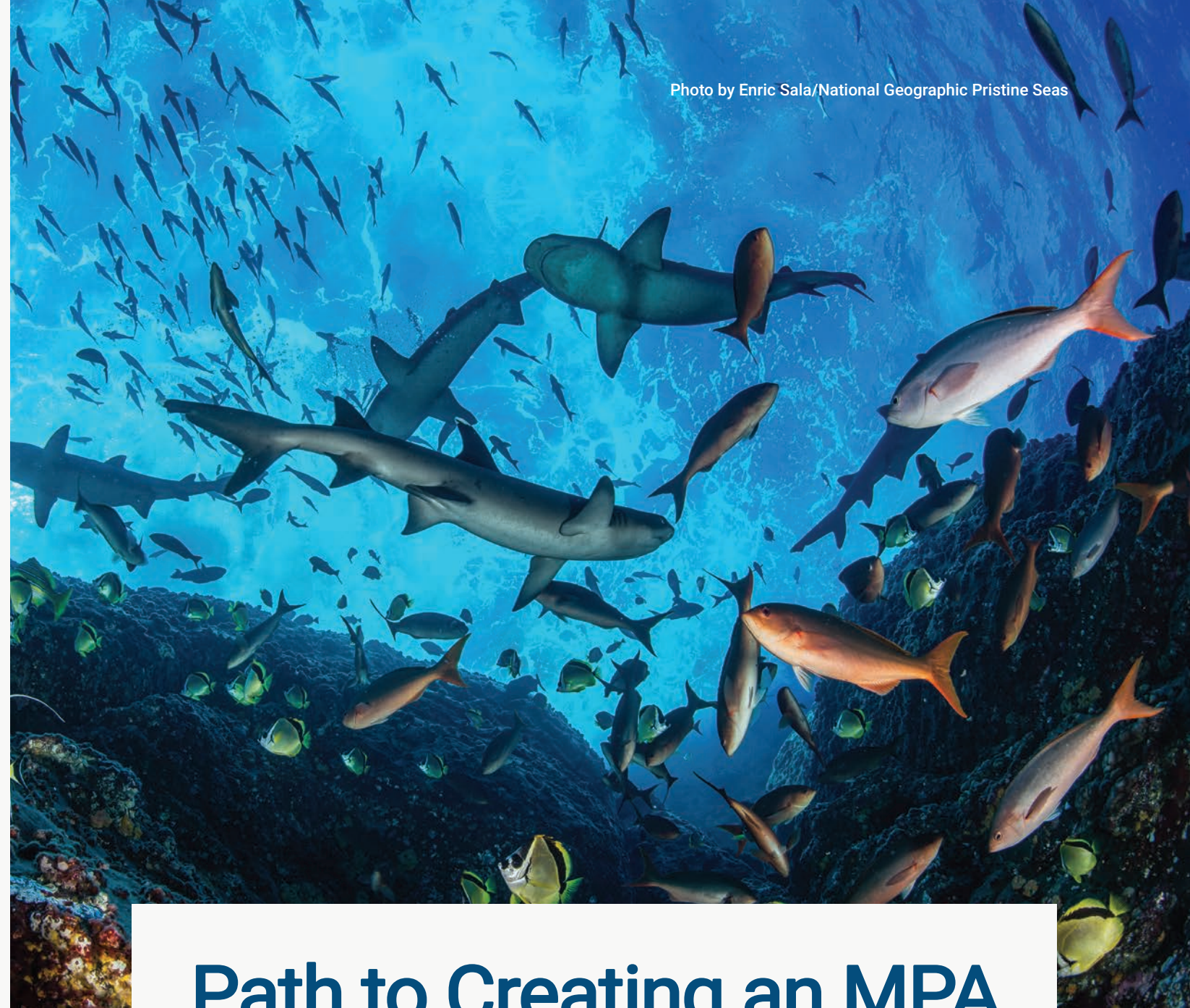
The Haida Nation and the Government of Canada equally comprise the Archipelago Management Board.

The Archipelago Management Board strives for ecological restoration, cultural preservation, and educational engagement of Gwaii Haanas. Ongoing ecological recovery projects include salmon habitat restoration, removal of invasive deer, kelp forest restoration through urchin removal and sea otter co-existence plans, archeological and restoration work, and protection of ancient murrelets through invasive rat removal. Several of these projects include community engagement aspects, through youth participation in salmon fry release, community dialogue sessions, and providing fresh food through removed species. While these engagement types vary, they all develop ocean literacy by highlighting the interconnectedness between humans and our ocean. The 2018 Gwaii Haanas Gina 'Waadluxan KilGuhlGa Land-Sea-People Management Plan rezoned the marine areas of

Gwaii Haanas, creating strict protection zones that prohibit commercial and recreational fishing, with exceptions for Haida rights of traditional use. Other ways to engage with the land that are permitted include camping, boating, marine mammal watching, and appreciation of cultural sites.

Looking to the future, the Haida Nation is working with 16 other First Nations and the Canadian government to develop the Northern Shelf Bioregion MPA network. An MPA network would promote healthy marine ecosystems alongside healthy local economic communities and First Nation cultural preservation through access to traditional resources. The network would also promote cooperation, making space for community engagement and the development of ocean literacy.

Gwaii Haanas presents an inspiring success story where Indigenous civil disobedience and persistence resulted in cooperative management. While many MPAs protect small, relatively homogeneous areas, Gwaii Haanas, in contrast, protects a broad range of important ecological and cultural features. This allows us to view a robust system rather than just part of a system and to observe the benefits that come from holistic thinking in environmental work. While there were and are many challenges, the rewards from successful restoration projects are immense. MPA management systems around the world would therefore benefit from learning about the exemplary work of Gwaii Haanas.



Path to Creating an MPA

The stories in this toolkit illustrate how Marine Protected Areas (MPAs) come with varying degrees of protection, with “fully protected” MPAs accounting for less than a third of the total protected area of our ocean. In total, more than 16,000 MPAs have been established by some 130 countries around the world – each country having its own unique government structures, laws, values, and priorities. It can therefore be difficult to define

itively describe the different steps to establishing an MPA since the process varies so much globally.

Nevertheless, understanding the process behind MPA designation is crucial for more effective advocacy. The infographic below aims to provide you with a general overview of the various steps involved in MPA creation. While it is not a step-by-step guide, it will help you better understand the many pieces of the puzzle.



Proposal

This phase may be conducted by citizens, organizations, or dedicated government bodies.

Site Selection

Natural qualities such as biodiversity and ecological significance, as well as cultural or economic value, are considered. The needs of local communities and the likelihood of successfully implementing and enforcing an MPA in that area also inform this decision. The potential for positive spillover effects and integration with other MPAs enhances candidacy. These may be informed by traditional and scientific knowledge.

Impact Assessment

The potential economic and environmental impacts of the MPA are studied. How will the MPA affect different stakeholders, including local communities and private industry? What will be the associated costs of establishing, managing, and enforcing an MPA at this site? Short-term and long-term impacts must be considered, and an ecological baseline is established for future evaluation.

Obtaining Stakeholder Support

Community support is vital to the success of any MPA, from implementation to management and enforcement. The support of stakeholder industries (e.g., the fishing and tourism industries) is also crucial, and their support is sought (though not necessarily always obtained). This may further aid in conducting impact assessment and making a successful proposal.

Designation

The proposal is passed to the relevant government bodies for further consideration before it becomes law. These bodies may be at the local, regional, or national level.

Drafting Management Plan

Input and information from the proposal phase is used to draft a management plan and boundary map of the MPA. This plan may outline the MPA’s intended goals, baselines and protocols for data assessment, the proposed sanctuary regulations and zones, and information about staffing and administration. A final proposal is drafted based on public consultation before the MPA is officially designated by law.

Public Consultation

Affected communities and industries are consulted about the drafted proposal and public input is sought. Public meetings may be held and a review period occurs before a final draft is made. A proposed MPA may be scrapped at this stage if met with significant opposition.

Ensuring Financial Sustainability

Several financing mechanisms are used. In the Global North, the domestic government budget is often enough to finance MPAs. In the Global South, external development finance is usually sought from other countries or from multilateral organizations. Generally, funding is needed to cover the management costs of the MPA as well as compensation to local people for benefits foregone. The wider the support for the MPA’s establishment, the more readily funding can be sourced.

Management

Managing an MPA is a continual process that requires regular adjustments and fine-tuning after implementation.

Implementation

The MPA moves from existing on paper to being operational. Management plans are activated and integrated into existing policy frameworks and governance bodies, and funding is mobilized and allocated. Additional rules, conservation targets, and threats are identified. Community engagement activities, education programs, and partnerships are established, and systems are set in place for compliance and enforcement.

Monitoring and Evaluation

Monitoring is essential to determine whether the MPA is achieving its intended targets and improving ecosystem health. This requires selecting the right indicators and providing monitoring protocols. Challenges frequently encountered at this stage include insufficient funding, staffing, tools, or scientific knowledge. Effective engagement of local communities can make the difference between a successful MPA and a “paper” MPA.

Enforcement

Most of the world’s MPAs suffer from a lack of enforcement. Enforcement is costly and requires coordination and continued engagement, but without proper enforcement, none of the other steps matter. MPAs are enforced through direct surveillance and robust regulation. Education and incentives are also crucial components of enforcement. With the aid and popular support of citizens and local communities, enforcement can be far more effective and cheaper.

UNITED STATES
OF AMERICA

North Pacific
Ocean

Chumash
Heritage

• MARINE MANAGEMENT AROUND THE WORLD

Chumash Heritage National Marine Sanctuary

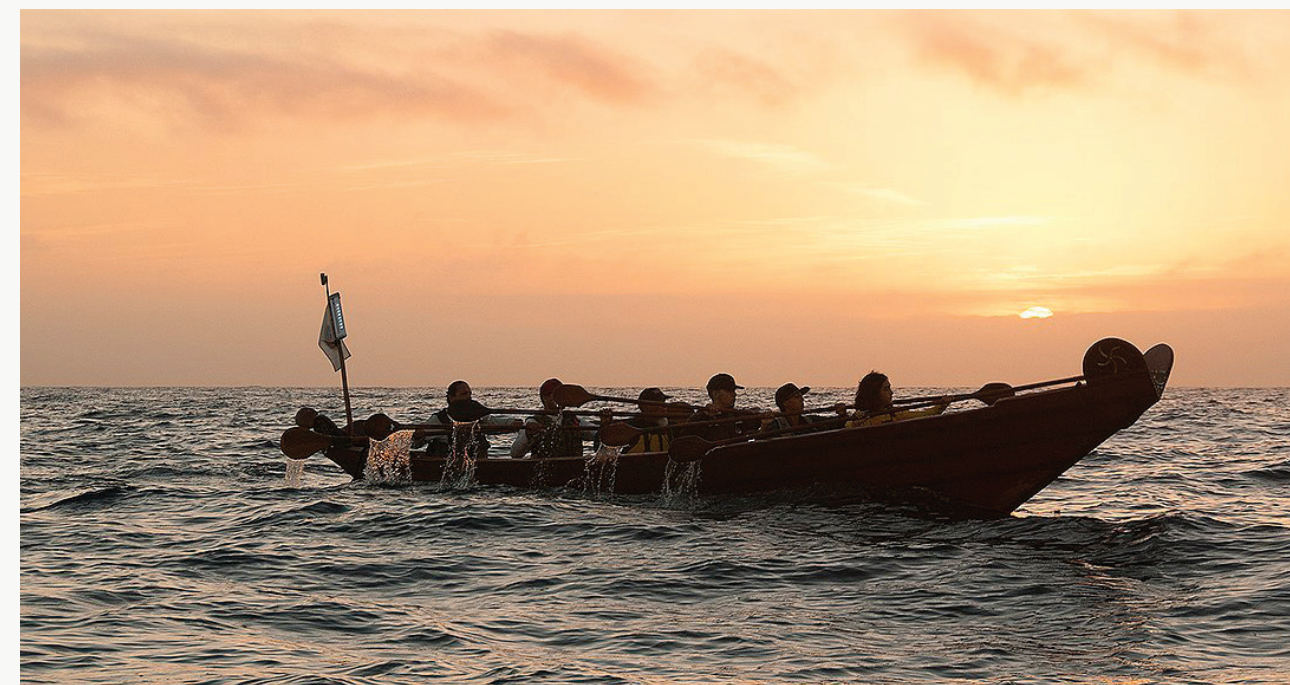
From the town of Santa Barbara along California's beautiful central coast in the United States, a pair of binoculars and some patience is enough to see wonders.

Harbor seals sunbathing in forests of golden kelp, dolphins traveling in pods hundreds strong, and, in the right season, gray and hump-back whales undertaking thousand-kilometer journeys. On clear days, the largest of the Channel Islands, some 30 kilometers offshore, emerges from the horizon.

Santa Cruz Island, or *Limuw* as it is known to the Chumash people who have inhabited this region

for over 15,000 years, is where the story of the Chumash begins. Tradition tells how they crossed the Santa Barbara Channel from *Limuw* with the aid of the Earth Mother, *Hutash*. She erected a Rainbow Bridge over the water, but not everyone made it to the other side. To save those who fell from drowning, Earth Mother turned them into dolphins. Ever since, the Chumash regard dolphins as their brothers and sisters.

The Chumash, for whom these waters provided material and spiritual sustenance for untold generations, remain connected to the ocean through layers of culture and history. Every year they paddle out to sea in Tomol canoes, honoring not only the traditions of their ancient ancestors but the life of their brothers and sisters in the water and the many sacred sites submerged on the seafloor. 54 years ago, when offshore oil rigs in the Santa Barbara Channel caused the largest oil spill in



Image

Traditional Tomol Canoe

Each year, the Chumash community crosses from Channel Islands Harbor to Limuw (Santa Cruz Island) in a 17.2-mile journey. In October, 2015, 25 "pullers" rotated into the six-person tomol, a traditionally-built plank canoe of indigenous Chumash design.

Photo by Robert Schwemmer/NOAA



Map
Proposed Chumash Heritage National Marine Sanctuary

California's history and devastated its rich marine environment, few communities were affected as deeply by the onslaught of oil as the Chumash.

In light of this history, the desire to preserve Indigenous culture is part of what makes the proposed Chumash Heritage National Marine Sanctuary (CHNMS) unique in ocean conservation. It is also the first Tribally nominated sanctuary in the United States.



The Chumash, for whom these waters provided material and spiritual sustenance for untold generations, remain connected to the ocean through layers of culture and history.

In 2013, the Northern Chumash Tribal Council launched a grassroots campaign to formally nominate the site for sanctuary designation. Leading the campaign was Fred Collins, a Chumash Tribal leader and long-time environmental justice advocate. It was a two-year effort that required impressive collaboration with various Tribal and nonprofit organizations. In 2015, the National Oceanic and Atmospheric Administration (NOAA) accepted the nomination, and in late 2019 began a sanctuary designation process. NOAA estimates the sanctuary to be officially designated in 2024.

The proposed Sanctuary would protect approximately 18,000 square kilometers of ocean stretching along 250 kilometers of the California coastline. It is an area of critical importance for migrating marine life: a persistent upwelling feeds surface plankton with nutrient-rich water from the deep, creating hotspots that feed a stunningly diverse array of fish, marine mammals, and birds. The site also includes extensive kelp forests and

important habitat for many endangered and threatened species, including blue whales, southern sea otters, and leatherback sea turtles. In total, 13 species of whales and dolphins gather and migrate through this region. Onshore, sandy beaches and coastal dunes would be protected, along with wetlands that serve as nursery grounds for various commercial fish species.

The 1969 Santa Barbara oil spill is a reminder of what's at stake. This Sanctuary would protect the enclosed region from oil and gas extraction and oil pipeline construction – eliminating the potential of another oil spill in the future. But it would also protect against other threats such as seismic surveying, a destructive practice for locating oil reserves that can kill marine life and impact habitats in the process. It has also been observed that this region is experiencing ocean acidification at twice the average global rate. By protecting ecosystems from human disturbances and allowing them to recover and grow, they become more resilient to the impacts of climate change.

Under the proposal, marine-based Indigenous traditions and rituals practiced by Chumash and Salinan peoples for countless generations would be honored, supported, and allowed to continue. At the same time, the economic benefits for the wider community are immense: creating this marine sanctuary would add an estimated USD 23 million per year to the local economy and create 600 new jobs. It would pave the way for more Tribal co-management of our planet's terrestrial and marine resources and acknowledge the importance of Indigenous knowledge in conservation and sustainability.

NOAA is currently exploring sanctuary management arrangements that could offer meaningful roles to Tribes from the area, supporting a collaborative and partnership-based approach. These ideas, which grew out of extensive conversations with Tribes, include structural elements such as the formation of a Sanctuary Advisory Council with multiple seats for Indigenous knowledge, a



The desire to preserve Indigenous culture is part of what makes the proposed Chumash Heritage National Marine Sanctuary unique in ocean conservation. It is also the first Tribally nominated sanctuary in the United States.

possible Indigenous Cultures Working Group to bring together a cross-section of Tribal representatives, an Intergovernmental Policy Council to support federally-recognized Tribes coordinating with NOAA and the State of California, and partnering with one or more nonprofit foundations that are envisioned to support Indigenous community involvement.

Once designated, the Chumash Heritage National Marine Sanctuary would become the fifth marine sanctuary in California. It would bridge the existing Monterey Bay and Channel Islands marine sanctuaries, creating a biological corridor for migratory species that will have positive spillover effects for the entire coast and beyond.

Photo by Sandra Turner



• OCEAN ACTIVISM

Sandra Turner

interviewed by Summer Snell

There are now more than eight billion people on our planet and I've never connected as quickly with someone as I did with Sandra Turner.

The former school teacher, current National Geographic Explorer and Storyteller, was lovely enough to sit down with me and explain her work, her passion, and the importance of ocean literacy.

Sandra is originally from the parish of Saint Andrew in Jamaica and is currently based in South Florida in the United States, where she researches the impacts of climate change and the geological formation of Caribbean islands. When she's not researching, Sandra explores the Caribbean, implementing citizen science projects, creating educational content, and utilizing the power of digital storytelling as a means of educating local communities about climate and ocean literacy. Her ultimate goal, she says, is to ensure that people in vulnerable communities understand the *"inter-connected nature of our planet"*, and consequently why sustainability is essential.

The catalyst for this work didn't start until later in Sandra's life. During her travels she became aware of problems surrounding the coral reefs of Jamaica. Since that moment, nothing has stopped her from learning what she could about climate change and coral conservation. She first became a Climate Reality Leader trained by Al Gore, former Vice President of the United States and renowned environmentalist. She went on to further study climate change at Harvard University, Massachusetts in the United States and earned a handful of climate and ocean-related certificates from the Sustainable Development Goals (SDG) Academy. All the while, developing her swimming and SCUBA diving skills to partake in underwater restoration efforts. Sandra is nothing but determined and



Map

St. Andrew, Jamaica

never saw any difficulty as a challenge, but rather, as a necessary step to achieve her goals. This inspiring message and determination create the confidence that future conservationists will need.

Sandra has achieved some incredible things in her career such as developing instructional resources dedicated to the science of awe and wonder, creating a unique ocean-based mindfulness program, and gaining an appreciation for nature during her extensive travels to the Caribbean. However, one of her proudest achievements is developing the ability to take complicated scientific concepts, such as climate change, and make them comprehensible to young children. This is a key skill for conservationists, who often act as messengers to help scientific research reach the general public. The importance of communication cannot be underestimated and while subject knowledge is important, the ability to communicate it to others is paramount. For Sandra and myself, who have

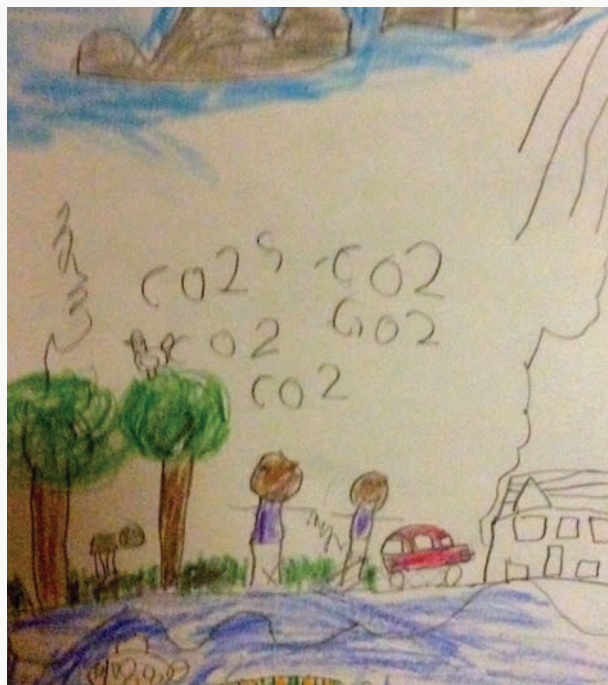


Image
Artwork by One of Sandra's Students

both worked as primary school teachers, educating future generations about caring for our planet is essential. Sandra has seen the effect of this firsthand, where her previous second-grade students produced scientific illustrations depicting the causes of global warming.

Communication also plays a vital role in collaborating with others to achieve conservation goals. It is through Sandra's work with Dr. Vicki Phillips, National Geographic's former Chief Education Officer, that Sandra was awarded the title of "National Geographic Explorer" in 2021.

While Sandra is an inspiring role model to many, she herself is inspired by our ocean, and the more than 700 islands that make up her Caribbean home and its rich cultures and environments. Sandra feels especially grateful to be able to work near and interact with the sea and describes being in the ocean as a "sensory awakening like no other". This feeling is one that she aims to share with others, through her program which promotes "ocean mindfulness". This program connects young people with the ocean in a way that supports their emotional health and well-being.

Sandra's dedication in this field reflects her favorite marine organism, the parrotfish, which she describes as "one of the hardest working species in the ocean" for its role in eating algae, which prevents coral suffocation. Sandra's quiet, gentle nature belies incredible strength and she advocates for spending time contemplating and observing the world around us to develop the unique and creative skills needed to address the challenges facing our ocean. She advocates for unique solutions, inspired by her favorite quote from Maya Angelou, "if you're always trying to be normal, you will never know how amazing you can be." Sandra's final words of advice are simple in concept but require bravery and being truthful to oneself: "find your voice". Inspiring words from a truly inspiring ocean hero.



Campaign How-To

Deciding to Act

Albert Einstein said, “If I had an hour to solve a problem, I’d spend 55 minutes thinking about the problem and five minutes thinking about solutions.” With the urgency of the climate crisis, this message may seem contrarian. But before you can take effective action you have to ask yourself...

What specific problem am I trying to address?

‘Stopping plastic pollution’ is not specific, but getting your school campus to use reusable utensils instead of single-use ones is.

Where can my efforts be most impactful?

Rather than duplicating the efforts of an existing group in your community, join forces with them or seek out another community that is underserved.

What are the potential obstacles and challenges?

Don’t let yourself get dissuaded from taking action by dwelling on the challenges. Instead, acknowledge that meaningful change is difficult to achieve and that you are confronting the problem with genuine intent to make a difference.

Designing a Community Outreach Campaign

Outreach falls under 3 categories...

- 1 Outreach to inform**
e.g. raising awareness about the types of sun-screen harmful to marine life, and informing your audience about practical alternatives
- 2 Outreach to consult**
e.g. surveying a community to better understand their needs and viewpoints
- 3 Outreach to seek support**
e.g. a social media fundraising campaign or a petition to gather signatures for a proposed policy

An effective outreach campaign...

- ✓ Is designed for a specific target audience and outcome**
Every community has its own concerns and priorities – adjust the language of your campaign accordingly.
- ✓ Maximizes available resources**
Have you thought critically about the best way to use all the resources you have? Sometimes the most effective plan is surprisingly simple – or effortlessly innovative.
- ✓ Is continually evaluated and refined**
Don’t be discouraged if your initial targets are not met. Keep what worked and change what didn’t, then try again.

“ **Don’t go in alone. Identify partners. There may already be coalitions working in the same campaign. Work with them and learn about their work. When you understand what they’re doing, you can understand more about the unique value you can provide to the effort.** ”

– Mark, 24, Washington, D.C.

Campaign Checklist

- I am well-informed about the issue I am trying to solve. I have considered different angles and approaches, and acknowledge that I may not have the best solution right now.
- I have a general roadmap for what I want to achieve by when; targets are well-defined and realistic.
- I have fully considered all the resources at my disposal, and I am thinking optimistically about the help I can receive from others.
- I am committed to the cause I’ve chosen and have reliable ways to renew my motivation and inspiration once I start feeling burnt out.

Securing Funding

Not every campaign will require money, but many do. Securing funding can be very time-consuming and labor-intensive, so make sure you have a dedicated team and strategy ahead of time. Common fundraising methods include:

Grants

Many universities, Nongovernmental Organizations (NGOs), and government bodies offer grants specifically for youth and/or environmental initiatives.

Grassroots fundraising

Ask for donations, sell products and services, or organize ticketed events. Be specific and relatable with your campaign’s goals and progress. Identify individuals and organizations to personally reach out to.

Sponsorships

If you are hosting an event, you may reach out to companies or organizations to inquire about sponsorship.

About Partnerships

Partnering with another organization (youth or otherwise) is a great way to combine resources and take your campaign to the next level. This applies for any resource that is limiting your team, including money, equipment, manpower, or audience base.

Using Social Media

Social media can be used to inform, consult, and inspire, but do you know how to best utilize it?

[Read more on pg. 62](#) →

Additional Actions to Consider

- 1 Advocating for an MPA**
To achieve the 30x30 target, we have to rapidly scale up ocean conservation. But as described in the Path to Creating an MPA section, the process of establishing a new MPA is long and resource-intensive. Instead of starting your own campaign, have you considered lending your time and skills to an existing effort? You may volunteer/intern with an NGO or government organization, or help out a grassroots initiative!
- 2 Writing**
Sometimes, the most fruitful action you can take is writing (and publishing your writing). Through writing you can educate, amplify the work of other youth, raise awareness about an issue you care about, or get people to think in ways they’ve never thought before. The creation of this toolkit is an example of six young people sparking environmental action through writing.

“ **We know that individual actions cannot change the world, yet we choose to not sit on the fence and wait for the system to change. We can form a community of change, which will then push the system to change.** ”

– Dhaanya and Reaha, 11 and 9, Hong Kong

[Watch their TED talk here](#) →



• OCEAN ACTIVISM

Oluwaseyi Moejoh

As a young environmentalist living in the landlocked suburban region of Lagos, Nigeria’s largest city, the ocean may be out of sight, but it’s never out of mind. I am always building exciting and impactful projects to conserve and protect our ocean.

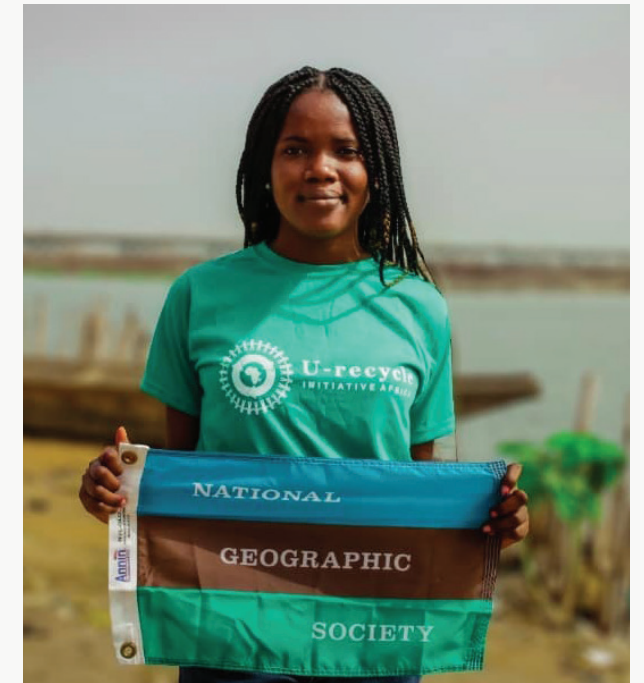
How It Started

When I was 16 years old, I carried out one of my first community projects. It was a school talk where I explained the importance of water conservation. I recall the stage fright, adrenaline rush, and excitement I felt while reciting my poem as I looked out into the eyes of the more than 2,000 girls looking back at me.

I never imagined that my small community project would ignite a lifelong journey of activism. But it did, and I’m proud to be playing a role in inspiring and equipping young people to join the movement. From that first school talk to leading projects and educating youth across Africa, I’ve seen the effects of little actions and the ripples of impact they can create over time.

Why?

My journey of impact has been like swimming against the tide, taking bold steps to influence change to create a world without plastic – one mind at a time. But it has never been a walk in the park, although starting so young has given me a head start. It gets very challenging at times. Despite the difficulties, I am constantly reminded of the importance of perseverance and determination.



My drive stems from the pressing issue of environmental injustice, particularly the devastating impact of plastic pollution.

“Without significant action, there will be more plastic than fish in the ocean by 2050.” This seemed like just a random fact on the internet until the day I listened to a coastal community dweller describe the realities of how plastic pollution was destroying his once prosperous town and threatening their primary source of income, fishing. The situation seemed hopeless, with no solution in sight and tons of plastic waste piling up on their shores. This story was not unique, as I had seen similar effects in another coastal community in Lagos. It was then that I fully understood plastic’s devastating impact on our ocean, coastal communities, and us.

At every point of its lifecycle, plastic perpetuates a multitude of injustices, but tragically, its convenience has blinded us to the harm it causes. From the placenta of unborn babies to the summit of Mount Everest, plastic has infiltrated every corner

of our world, and it is high time we turn off the tap. In many countries, including mine, a lack of awareness about the extensive effects of plastic pollution has hindered the drive to make meaningful changes. This knowledge gap is vast and demands attention.

The Power of Youth

Another reason I do the work I do is this: I have seen the difference that young people can make when given access to the right knowledge, skills, resources, and opportunities. *“Young people can change the world.”* This belief fuels my work and inspires me to empower the next generation to create real and lasting change.

Unfortunately, in many countries, including mine, opportunities for youth development in environmental conservation are limited. That’s where I come in. Through my nonprofit, U-recycle Initiative Africa, I am working to bridge this gap by offering comprehensive leadership programs that tackle the issue of plastic pollution while promoting youth development.

Our programs have received support from the Government of Canada and the National Geographic Society, allowing us to expand our work across Nigeria. Some of our flagship projects include The African Youth for Environment Fellowship, which engaged over 5,000 teens through 24 environmental and youth-development projects. And our current project, The PlasticWize Fellowship, is a transformative leadership development program tackling marine plastic pollution by empowering young women to lead and influence behavioral change across universities and higher institutions in Nigeria.



My journey of impact has been like swimming against the tide, taking bold steps to influence change to create a world without plastic – one mind at a time.

From being named a National Geographic Young Explorer at 19 to winning the Diana Award at 21 to being featured on a CNN news segment, it has been a pleasant ride on this unconventional path I have chosen to follow. However, in all this, I am most fulfilled when I see how the work we do at U-recycle Initiative Africa is truly changing the status quo, unlocking youth to a world of life-changing opportunities, as we move the needle toward a world without plastic. We have begun to leave an indelible mark in minds and lands – etching inspiration into the hearts of young people to protect nature.

Dare to Dream

With each step forward, I am reminded of how my journey began and the valuable lessons I have learned along the way. As young leaders, it’s crucial to build our capacity by developing our skills and passions. I have also come to realize the power of storytelling in sparking inspiration for change.

Finally, I’ve learned that it’s essential to “think global, act local.” When I started this journey five years ago, I never imagined the reach and impact it would have. But it all started with little actions. Today, I hope my story will inspire you to dream big and pursue your passions with faith as we shape the future of our planet.



Leveraging Social Media

Social media has transformed the world into a global interconnection of resources, entertainment, and interaction, transcending geography and reaching a vast audience.

A 2022 report estimated that over 57.6% of the global population has adopted social media as an important element of their everyday life. With billions of people active on Facebook, Instagram, Twitter, TikTok, and LinkedIn, information and ideas can spread at an unprecedented pace, mobilizing communities and catalyzing change.

Social media's incredible reach can be leveraged to raise awareness about a wide range of urgent topics, from environmental concerns to human rights, social justice, and health. Through compelling visuals, impactful stories, and hashtags that go viral, social media campaigns have sparked widespread conversations, bringing marginalized voices to the forefront of discussions.

From #LovesLove to lifting Indigenous voices, we have experienced the incredible power of social media in amplifying diverse voices and creating awareness. Thus, digital advocacy should be an unmissed part of your daily marine advocacy.

Choosing Your Platform

In the world of social media, choosing the right platform is crucial. Instagram and TikTok are excellent platforms for driving action, while TikTok is the leader in engagement and basic awareness. Twitter and LinkedIn have decent engagement **conversion rates**, while Facebook is the most useful platform for reaching older demographics.

Conversion rate refers to the percentage of website or app visitors who take a desired action; often used as a metric to measure the effectiveness of digital marketing and website optimization efforts.

It's important to remember that each social media platform has its unique strengths and weaknesses. Therefore, you should carefully consider your goals and audience before choosing the right platform to maximize your impact.

Approaches

Everyone knows the power of social media, but as a campaigner, you should know that algorithms dictate who and how many people will see your content – and much of this you have no control over. But there are proven ways to skew the odds in your favor:

- 1 Consistency is key**
You will develop a greater viewership by having a regular posting schedule and routinely using a variety of content (for example, a Q&A every Friday, a series of polls every Wednesday, etc.).
- 2 Utilize tracking and analyzing**
Many social media platforms offer tools to track your content's performance; this will help you know what's working and what's not. Adjust your social media strategy accordingly.
- 3 Tag and be tagged**
Being mentioned or shared by a bigger page can direct lots of traffic your way, so make sure to capitalize on those opportunities.
- 4 Allow your audience to interact**
Encourage comments, shares, reposting, and tagging.
- 5 Don't dilute your page with too much content**
Make each post count, and change up the formula now and then to keep your audience engaged.
- 6 Stay up-to-date with current social media trends**
Adapt your strategy as needed to stay ahead of the curve and remain relevant and effective.
- 7 Integrate your social media strategy into your campaign**
Use a holistic approach that incorporates social media with email marketing, in-person events, and traditional media to create a cohesive and effective campaign.

Messaging DOs and DON'Ts

- ✓ Keep the message clear, concise, and effective**
Marine Protected Areas (MPAs) can be a complex topic to spread awareness about. Ensure that the intended message of a post is clear and easy to comprehend without compromising the severity of the subject.
- ✓ Focus on the human connection**
Include crucial and familiar elements of the ocean such as marine animals, seagrasses, and corals as your main messaging highlights. Remember eye contact is the key in posts celebrating the human-animal bond.
- ✓ Include a robust Call To Action**
Including a conservation-associated "ask" is as important as the message itself. Keep the CTA effective but not too demanding. Offer multiple options for action based on the level of engagement and time commitment.
- ✓ Tailor your message for your audience**
Study your target audience to determine the tone of your messaging. Younger audiences tend to prefer a more proactive, simple but inspirational tone while older audiences prefer a more humorous and informative tone.

- ✗ Forget stories of optimism**
Show the reality of the situation, but don't aim to shock. Regularly post about ocean wins to ensure a balance between gloom and hope.
- ✗ Assume the familiarity of your audience with a topic**
Understand that MPAs aren't a common concept to everyone. Always define MPAs or other complex terms in your text.
- ✗ Overwhelm people with excessive information**
People often scroll through social media to relax and be entertained. Depending on the platform and your particular audience, you may need to keep the information light and easy to absorb.



Share this toolkit

We need your help sharing information about this toolkit to encourage others to get involved with ocean conservation!

Help us spread the word about ocean literacy and MPAs using the hashtag #MyCommunityMPA.

Keep the conversation going!



Resources

Ocean 101

- An in-depth breakdown of the seven Ocean Literacy principles: “The Ocean Literacy Guide” by NMEA – [Link](#)
- A timeline of the term “Ocean Literacy” and its development: “Ocean Literacy Across Time and Space” by NMEA Ocean Literacy and International Committees – [Link](#)
- A detailed report on the effects of climate change on our ocean: “Special Report on the Ocean and Cryosphere in a Changing Climate” by the Intergovernmental Panel on Climate Change – [Link](#)
- Check out National Geographic’s Marine Debris Tracker App, an open data citizen science movement – [Link](#)

MPAs At-A-Glance

- A high school-level overview of MPAs accessible in English and Spanish: “The Importance of Marine Protected Areas” by National Geographic – [Link](#)
- A peer-reviewed paper on the history of Marine Protected Areas: “A Critical History of Marine Protected Areas” by John Humphreys and Robert Clark – [Link](#)
- To learn more about maritime law: “Maritime Zones and Boundaries” by NOAA – [Link](#)
- A two-page overview of Aichi Biodiversity Target 11: “Quick Guide to the Aichi Biodiversity Targets: Protected Areas” by the Convention on Biological Diversity (CBD) – [Link](#)
- A breakdown and history of the United Nations’ 17 Sustainable Development Goals: “The 17 Goals” by the UN – [Link](#)
- A ten-page brief on what counts towards the IUCN’s 30x30 goal: “Conserving at Least 30% of the Planet by 2030—What Should Count?” by the IUCN WCPA Task Force – [Link](#)
- A digestible breakdown of the Kunming-Montreal Global Biodiversity Framework: “Cop15:

Final Text of Kunming-Montreal Global Biodiversity Framework” by the CBD – [Link](#)

Pristine Seas

- Watch this short video on the establishment of an MPA in Cabo Pulmo: “Why Are Marine Protected Areas Important?” by Scripps Oceanography on YouTube – [Link](#)
- Watch this TED talk underlining the importance of local fishing communities to ocean conservation: “How a handful of fishing villages sparked a marine conservation revolution” by Alasdair Harris on YouTube – [Link](#)
- Explore the Pristine Seas Resource Library for a plethora of educational content: “Education Pristine Seas” by National Geographic Education – [Link](#)
- Use National Geographic’s Geo-Inquiry Process in your environmental education efforts: “Program The Geo-Inquiry Process” by National Geographic Society – [Link](#)
- Tune in to the National Geographic Explorer Classroom for free interactive sessions led by NatGeo Explorers: “Explorer Classroom” by National Geographic Society – [Link](#)
- “Bringing the Ocean Back: An Introduction to Ocean Conservation” by National Geographic Education – [Link](#)

Explore and Protect: Niue Moana Mahu

- An article on the declaration of Niue’s MPA: “Niue declares 40% EEZ as Marine Protected Area” by Pacific R2R – [Link](#)
- A scientific report on Niue island’s marine life and ecosystems: “Exploring the Marine Ecosystems Of Niue Island and Beveridge Reef” by National Geographic Society – [Link](#)
- A short overview of the Pristine Seas expedition to Niue: “Expeditions: Niue” by National Geographic Society – [Link](#)
- A research paper on Niue island’s unique ge-

ology and rock composition: “Geomorphic Features of Niue Island: Chasms, Caves, and Other Karst Varieties” by the International Scientific Council for Island Development – [Link](#)

Ocean Activism: Dr. Shireen Rahimi

- To learn more about Dr. Shireen Rahimi’s work, visit: “About - Light Palace Productions” – [Link](#)
- Experience a story of ecological loss and acceptance directed and written by Dr. Shireen Rahimi: “Letter from the Age of Ecocide” – [Link](#)
- Watch “Off the Hook: A Nat Geo SharkFest Adventure” featuring Dr. Shireen Rahimi – [Link](#)

Explore and Protect: Franz Josef Land

- The official page of the expedition: “Expeditions: Franz Joseph Land” by National Geographic Society – [Link](#)
- For an overview of the Russian Arctic National Park: “Russian Arctic National Park” by the Russian Geographical Society – [Link](#)
- View these documentaries and photo galleries about Franz Joseph Land: “Franz Josef Land” by Blancpain Ocean Commitment – [Link](#)

Different Ecosystems, Different MPAs

- Detailed and technical guidelines on MPA categorization: “Guidelines for applying the IUCN protected area management categories to marine protected areas” by the IUCN – [Link](#)
- Case studies on different MPA governance approaches: “Enabling Effective and Equitable Marine Protected Areas: Guidance on Combining Governance Approaches” by the UNEP – [Link](#)

Marine Management Around the World: Chumbe Island Coral Reef Sanctuary

- Watch this five-minute video on the history and impact of Chumbe Island Coral Park: “Chumbe

Island - Zanzibar’s world class natural coral heritage and biodiversity destination” on YouTube – [Link](#)

- Read the full UN report on MPAs in the Western Indian Ocean: “Marine Protected Areas Outlook: Western Indian Ocean” by the UNEP – [Link](#)
- A middle school-level activity on the ocean and its categorizations: “Our Interconnected Ocean” by National Geographic Society – [Link](#)
- Homepage of the Chumbe Island MPA: chumbeisland.com – [Link](#)
- An official list of the targets and indicators under SDG14: “Metadata-Goal-14” by the UN Statistics Division – [Link](#)

Marine Management Around the World: Arnavon Community Marine Park

- Open access research about the Arnavon Marine Park: “The Arnavon Community Marine Conservation Area: A Review of Successes, Challenges, and Lessons Learned” on ResearchGate – [Link](#)
- A short article and video about the KAWAKI Women’s Network: “The KAWAKI Women’s Group: Turtle Advocates” by The Nature Conservancy – [Link](#)

Marine Management Around the World: Paliton Marine Sanctuary

- A scientific paper that explores leadership and trust in the context of MPAs, based on studies conducted in the Philippines: “Exploring Leadership Dynamics in Community-based Marine Protected Areas” in Marine Policy – [Link](#)
- For another paper on effectively managing MPAs: “Marine Protected Area Management Effectiveness: Progress and Lessons in the Philippines” in Coastal Management – [Link](#)
- Read the Tagalog creation story: “The Creation Story (Tagalog Version)” by Mabel Cook Cole – [Link](#)

Ocean Activism: Fernando Bretos

- A short biography of Fernando Bretos and overview of his career: “Fernando Bretos” by National Geographic Society – [Link](#)
- A two-minute video on Fernando Bretos’s mangrove restoration project: “Together Green Fellow Fernando Bretos Restores Coastal Miami Habitat with Eco-Art” on YouTube – [Link](#)
- An infographic on Mangroves available in English, Spanish, and French: “The Mangrove Ecosystem” by the National Geographic Society – [Link](#)

Marine Management Around the World: Hā’ena Community Based Subsistence Fishing Area

- For a refresher on MPAs and their benefits in the context of Hawaii: “Marine Protected Areas in Hawaii” by the Hawaii Department of Land and Natural Resources – [Link](#)
- A comprehensive guide to the designation of community-based subsistence fishing areas: “Community-based Subsistence Fishing Area Designation Procedures Guide” by the Hawaii Department of Land and Natural Resources – [Link](#)
- Hā’ena Community-Based Subsistence Fishing Area homepage – [Link](#)
- A 24-minute documentary on Hā’ena: “Voice of the Sea: Community-Based Subsistence Fishing Areas” by the University of Hawai’i Sea Grant Center for Marine Science Education – [Link](#)

Marine Management Around the World: Gwaii Haanas National Marine Conservation Area Reserve

- For a general overview of Gwaii Haanas: “Gwaii Haanas” by The Canadian Encyclopedia – [Link](#)
- For a history of the protected area’s establishment: “History of Establishment: Gwaii Haanas

National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site” by Parks Canada – [Link](#)

- The Council of the Haida Nation homepage – [Link](#)
- The Haida Nation’s Marine Planning Program homepage – [Link](#)

Path to Creating an MPA

For more guides on MPA creation and management:

- “The MPA Guide – Stage of Establishment” by Protected Planet – [Link](#)
- “Marine Protected Areas: Policy Highlights” by OECD – [Link](#)
- “Guidelines for Marine Protected Areas” by the IUCN – [Link](#)
- “Blueprint for Marine Protected Areas” by the Blue Marine Foundation – [Link](#)
- “Effectively Developing Marine Protected Areas” by The Ocean Foundation – [Link](#)

For information specific to USA and Canada on MPA creation:

- USA: “Creating a National Marine Sanctuary” by NOAA – [Link](#)
- Canada: “Creating new Marine Protected Areas” by Fisheries and Oceans Canada – [Link](#)

For more information about MPAs:

- “Enabling Effective and Equitable Marine Protected Areas” by the UNEP – [Link](#)
- “Engaging Communities in Marine Protected Areas: Concepts and Strategies from Current Practice” by the University of Michigan – [Link](#)
- An interactive map of MPAs around the world by protection level: The Marine Protection Atlas – [Link](#)
- Greenpeace’s recommendations on protecting marine areas beyond national jurisdiction: “Ten Steps to Marine Protection” by Greenpeace – [Link](#)

Marine Management Around the World: Chumash Heritage National Marine Sanctuary

- For more information about the proposed sanctuary, visit the homepage of the campaign: chumashsanctuary.org – [Link](#)
- For official information about the CHNMS and the designation timeline: “Proposed Designation Of Chumash Heritage National Marine Sanctuary” by NOAA – [Link](#)
- To view the original nomination: “Chumash Heritage National Marine Sanctuary Nomination June 2015” – [Link](#)
- To learn more about the Chumash and the people behind the nomination of the CHNMS: Northern Chumash Tribal Council Homepage – [Link](#)
- To watch a Chumash elder narrate the Chumash creation story: “Chumash Story: Seeds of Creation and the Rainbow Bridge” on WilderUtopia – [Link](#)
- Read this interview with Violet Sage Walker, daughter of Fred Collins and nominator of the CHNMS: “Artist Series -Violet Sage Walker” by Women Mind the Water – [Link](#)

Ocean Activism: Sandra Turner

- A short biography of Sandra Turner and overview of her career: “Sandra Mechelle Turner” by National Geographic Society – [Link](#)
- Read Sandra Turner’s “Breathe Like a Warrior: The Profound Lesson I’m Taking Into 2022” on National Geographic’s Education Blog – [Link](#)
- An interview with Sandra Turner: “Geographic Perspectives with Educator Sandra Turner” on National Geographic’s Education Blog – [Link](#)
- Explore Sandra Turner’s projects, ideas, and educational resources: “Sandra M. Turner” on Teach with GIS – [Link](#)

Campaign How-To

- A 14-page guide with practical advice for advocacy: “Rise Up: Advocacy Training Guidebook 2021-2022” by World Ocean Day – [Link](#)
- A tip sheet on community outreach: “Community Outreach Lessons Learned and Good Practices” by the Center for Community Development Canada – [Link](#)
- To learn more about Reaha and Dhaanya: “Hong Kong youth climate activists – aged 8 and 10 – on striking every Friday and taking on Starbucks’ vegan surcharge” by SCMP Young Post – [Link](#)
- To watch Reaha and Dhaanya’s TEDx talk: “Can our Choices Impact Climate Change? | Dhaanya & Reaha Ganerwal | TEDxCUHK” on YouTube – [Link](#)

Ocean Activism: Oluwaseyi Moejoh

Learn more about Oluwaseyi’s work here:

- U-recycle Initiative Africa – [Link](#)
- “Oluwaseyi Moejo at the Nature’s Newsroom at COP26” on YouTube – [Link](#)
- “Taking grassroots activism across Nigeria” on DW.com – [Link](#)
- “How Nigeria’s Oluwaseyi Moejoh Is Spreading Conservation Activism Across Africa and Beyond” by Smithsonian Magazine – [Link](#)

Leveraging Social Media

- On how to make effective hashtag campaigns: “Social Media Hashtag Campaigns: 10 of the Very Best (+ A Few Fails)” by Mention.com – [Link](#)
- Read five examples of successful social media campaigns by nonprofit organizations: “The Top 5 Best Nonprofit Social Media Examples” by Neon One – [Link](#)
- Read “The Ultimate Social Media Guide for Nonprofits” on Wild Apricot – [Link](#)

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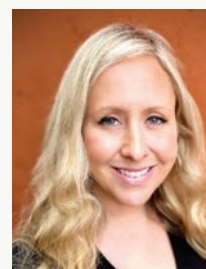
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