MESOAMERICAN REEF FUND

20 YEARS
OF CONSERVATION

2005-2025



MAR FUND

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20 MAR FUND



PROLOGUE

Against the backdrop of the Mesoamerican Caribbean's vast seascape, where life and time seem to weave together in the sea, we find ourselves celebrating two decades of shared history.

The Mesoamerican Reef Fund or MAR Fund, was born out of the urgent need to protect one of the richest, most complex and fragile ecosystems on the planet, the Mesoamerican Reef (MAR). If something sets the reef apart, and brings it to life, it's an interdependence and sense of community: fish larvae and crustaceans that travel across countries, emblematic and migratory species, invisible currents that connect destinations, ancestral knowledge that survives modernity and challenges that multiply as the years go by.

Twenty years ago, the MAR Fund was a bold idea: to join forces, resources and the will of institutions from four countries, to eliminate borders and to view the ocean the same way biodiversity does, with no geopolitical borders, no dividing lines, no exclusive territories. Those of us who were witnesses and authors of its birth are still moved, today, by the conviction that conservation is possible if it is shared; that the capacity to persist, as shown by the coral reef itself, depends on collective strength, patience in the face of storms and creativity when confronted with challenges and uncertainty.

The MAR Fund is a financial institution, a technical partnership and a living network of professionals, coastal communities and organizations that believe in continuity, transparency, impact and inclusion. Its mission—to secure regional funding and foster local and regional partnerships for the conservation, restoration and sustainable use of the reef—is renewed with every project, in every story of guardians, fishermen, women artisans, public workers, park rangers, scientists and young people who understand that the future of the Mesoamerican Caribbean depends on our coordinated and collaborative action today.

This book brings together voices, pathways, and lessons that remind us that conservation is not just about biology, ecology, biophysics or even the economy; it is, above all, a social, ethical and cultural commitment. MAR Fund is a testament to what can happen when cooperation is prioritized over competition; when there is trust, diversity is the starting point and resilience is the horizon. To those who are part of, were part of and will be part of this collective effort, we convey our deepest gratitude and also the hope that the decades to come will be even more fruitful, fair and innovative.

Welcome to the celebration of this shared history, brought to life by people who are shaping the future and our destiny.



MAR Fund Communications Committee

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Manatee (*Trichechus manatus*).
Photo: Valentina Cucchiara



PART I
INTRODUCTION

480 million years ago, a new form of life appeared at the bottom of the ocean. At that time, our planet was different from the one we inhabit today: there were no humans, no mammals, no birds in the sky, nor forests on the continents. Some primitive moss had begun to cover certain geological strata that now are lost somewhere below our feet. It could be said that the ocean was its heart, its great storehouse of life and diversity. It wasn't planet Earth, it was planet Ocean.

In this ancient version of the world, incredible creatures found a favorable environment in which to exist in shallow water. And 210 million years ago they developed a symbiotic relationship with dinoflagellate algae,[1] which allowed them to absorb the calcium from the water and grow. These creatures could have evolved into fish (they belonged to the animal kingdom after all), but instead evolution led them to undergo one of the most fascinating animal metamorphoses, which some biologists have compared to a "mythological creature" of the sea: one third animal, one third plant, one third rock: corals.

1 C. Zandonella, "When corals met algae: Symbiotic relationship crucial to reef survival dates to the Triassic," Princeton University, 2 November 2016.

Throughout geological eras that spanned millions of years, corals evolved into many species. Today there are around 2,175 of them distributed across the oceans, even in the freezing waters of the Arctic. However, although corals do exist in cold waters, the highest biodiversity is concentrated in tropical and subtropical waters.

Unlike humans, whose bones are covered in flesh, hard corals are covered by their skeletons, which protect their organs: the epidermis, dermis, mouth and stomach. Through the incorporation of calcium, corals build their skeletons, which, in a sense, are their home. Creators of themselves, they lay the blocks of their own natural structures. In some places, corals have colonized areas which, due to their concentrations, resemble cities. What we know as coral reefs (underwater structures formed by thousand-year-old accumulations of coralline polyp skeletons) are a testament to a past and continuing presence. Just as excavations in ancient cities such as Rome or Tenochtitlan invariably reveal the buildings, gardens and mosaics of older settlements, the coral reef is also built upon its previous layers, since the dead corals become the fossilized foundations upon which new corals take root.

But reefs are more than just a group of hard corals: within them, marine life is born, grows, reproduces and dies. They are places where some devour and others are devoured. They are hidden nooks for octopuses and moray eels, canteens for turtles, and caves for sharks. They are spaces where algae that feed herbivorous fish such as parrotfish, crucial to a healthy reef, can prosper, as well as commercial species such as snapper. Reefs are fundamental to biodiversity not just of fish, but also crustaceans of high economic value such as lobster.

And this takes place in such anomalous conditions (even in waters that are surprisingly nutrient-poor) that it sparked the curiosity of history's most famous scientific minds. In *The Structure and Distribution of Coral Reefs*, an essay written during the historic expedition of the Beagle, the naturalist Charles Darwin attempted to explain this divergence with the (erroneous)



Grunts (*Haemulon flavolineatum*) and Creole wrasses (*Clepticus parrae*).
Photo: Ramiro de Jesús Arcos Aguilar

theory of the volcanic origins of coral reefs. The existence of these colonies teeming with life, capable of generating the biomass which allows other species to feed and reproduce, in places with so few nutrients, was so mysterious that the phenomenon became known as Darwin's Paradox.

In the ocean there are places that stand out for the enormous size of their reefs, which have grown to such an extent that instead of being akin to neighborhoods or cities, they are actually empires of biodiversity. These include the Great Barrier Reef of Australia, the barrier reef in the Red Sea in Egypt, Djibouti and Eritrea, and the Mesoamerican Reef (MAR), which stretches along a thousand kilometers of the Caribbean coasts of Mexico, Belize, Guatemala and Honduras.

Although the name MAR is recent, this ecosystem is anything but new. It is estimated that the polyps from which it originated colonized the sandbanks in the region between Isla Contoy, Mexico, and Cayos Cochinos, Honduras, around ten thousand years ago, towards the end of the most recent ice age. Given that the presence of humans on the American continent dates back more than ten millennia, we can say that the settlement of the Americas and the growth of the MAR have followed parallel paths.

For thousands of years, the reef has played a key role in providing subsistence to civilizations of the region. Since its appearance almost five thousand years ago, the proliferation of the Mayan civilization in the countries bordering the MAR was closely linked to the sea. The presence of this culture's settlements along the Caribbean coast, including Tulum, Chac Balaam and Ichpaatún, among others, was linked to fishing made possible by the reef's ecosystem. The sea shells collected there were also used to make tools such as axes, drills, hammers, pins, and sharp tips, as well as musical instruments that were traded with distant corners of the Mayan world.[2]

2 A. Velázquez Castro and E. A. Castillo Velasco, "Circulación de las conchas en el área Maya", *Archaeobios* 16 (2022).

The chroniclers who arrived in the fifteenth and sixteenth centuries described a region of enormous terrestrial and marine biodiversity in the Central American and Yucatecan Caribbean. Diego de Landa, a bishop who learned to speak Mayan and travelled throughout the interior and along the coasts of the Yucatán Peninsula, left a record of the flora and the fauna he found. The friar wrote that along the Yucatán coastline there was such an abundance of fish, and the waters were so transparent, that nets were not even needed to trap fish: arrows and spears were enough to catch them in large quantities. This sea wealth meant plenty for the Mayans, who "carry out large-scale fishing" and "eat and sell fish to all the land," according to the monk's testimonies. Other marine animals that the Mayans obtained were turtles, which formed an important part of their diet, as well as their "eggs as large as those of chickens" and abundant in the thousands in the sands of the Yucatán.[3]

Over the course of nearly ten thousand years, and despite being used to varying degrees by people, the MAR did not experience significant environmental changes. During this period, unlike what happened in the rainforests—where fluctuations in rainfall led to significant tensions among the Mayans—the climatic conditions of the sea remained relatively stable. The reefs may have suffered anomalous episodes such as hurricanes, but nothing put the ecosystem's integrity at risk. On the contrary: the system expanded by accumulating upon itself.

During the centuries of colonial domination, Mexico, Guatemala and Honduras developed economies that were integrated into global markets. Mexico, however, ignored its Caribbean coast. Since its main ports were in Veracruz and Acapulco, the Caribbean zone of Quintana Roo was of secondary interest, a great distance from the Mexican capital's political power, and also far from the centers of influence such as Mérida and Campeche. It was only towards

3 D. de Landa, "Relación de las cosas de Yucatán" (n.p.: Wayeb, [1566] 2021).

the end of the 20th century that the region ceased to be a federal territory and was incorporated into the Mexican Republic as the state of Quintana Roo.

Honduras and Guatemala, on the other hand, recognized during their initial years of independence that the Caribbean coast could serve as an outlet for exports. During the final decades of the 19th century, the liberal governments of Guatemala built a modern port that favored commerce, something impossible to carry out earlier due to piracy. That's how Puerto Barrios was born; today, it is one of the country's main gateways to the world.

Honduras also understood that Puerto Cortés on the Atlantic coast would become a key location in their country, and even decided that it would be the final stop on an interoceanic train project. At the start of the 20th century, with the explosion of the banana industry in Central America, Puerto Barrios and Puerto Cortés saw a substantial rise in maritime traffic bound for the United States, including boats carrying bananas by the ton, coffee, and other raw materials.

In Belize the situation was different. This country, which up until 1981 had been a British territory, was a sparsely populated place where the colonists engaged in resource extraction. Mahogany, logwood and tropical cedar were harvested, and rubber was extracted from the forest, with negative impacts on terrestrial ecosystems. On the other hand, the sea was largely ignored, which contributed to the conservation of the reef at the beginning of the last century. For hundreds of years, the reef had served as a kind of aquatic wall that protected the country and provided abundant fish to the artisanal fishermen; it served as a natural barrier that stood between large ships and Belize's coast.

The ships that arrived at Honduran and Guatemalan ports during the 20th century were no longer the Spanish wooden caravels nor the pirate schooners, but enormous steamboats that departed with cargo bound for New Orleans. Their impact on the reef was often indirect and related to the growth of human settlements in the Caribbean region. This was clear in the case of Guatemala: the coastal city of Puerto Barrios, relatively isolated,



"*Carte des provinces de Tabasco, Chiapa, Verapaz, Guatimala*", J.N. Bellin, 1754.
David Rumsey Map Collection

underpopulated and close to the urban areas of Morales and Livingston, became one of Guatemala's most populated cities in the last century, due to the growing importance of its port.

In Mexico, the biggest change took place in the seventies when the federal territory known as Quintana Roo became the focal point of one of the most ambitious projects in the country's history: the construction of a touristic region, with the symbolic epicenter being the new city of Cancún. From 1978 onwards, with assistance from the Inter-American Development Bank (IDB) and through the National Fund for the Promotion of Tourism (FONATUR), the government established a development scheme for Cancún

known as the "Comprehensively Planned Center" (Centro Integralmente Planeado, CIP). It converted what was a small village into an artificial city, built according to the state's design. The IDB funds were used to pay for highways, streets, drainage, and other infrastructure, to accommodate 20,000 hotel rooms (in 2025 the figure had already reached 45,000 rooms) as well as an international airport. Thanks to this and an unprecedented international promotion campaign, by the mid-nineties Cancún had become Mexico's main tourist destination. It represented an important source of foreign currency for the government and an economic engine for the Yucatán Peninsula, as well as fantastic business for the investors who built the hotels on the sand dunes. Among the main attractions for the hundreds of thousands (soon to be millions) of visitors who arrived from all over the world to this remote place were activities such as diving, snorkeling and sport fishing, which were tightly linked to the health of the reef. The protection of these ecosystems began in 1973, with the creation of the Costa Occidental de Isla Mujeres Marine Flora and Fauna Refuge, which included the reefs on Cancún and Punta Nizuc.

For many reasons, the nineties were fundamental for conservation in Latin America and the Caribbean. Interest in and concern about protecting temperate forests in the region dated back half a century, and the impetus for conserving the tropical rainforest began to gain momentum in the scientific community in the seventies. But it wasn't until the last decade of the 20th century that conservation became a priority for the public agenda, paving the way for approaches and strategies to address environmental issues.

As the end of the millennium approached, cities were growing quickly, pollution was increasing and forests were disappearing, due to a model of progress that demanded exploitation to satisfy consumer demand, not only in nearby towns, but also overseas. For example, the signing of the North American Free Trade Agreement (1994) between Mexico, Canada and the United States reinforced an economic orientation centered around the export of raw materials and manufacturing. With the advance of the agricultural



Banded butterflyfish (*Chaetodon striatus*).
Photo: Ana Giró

border and desertification, Latin American leaders and civil society understood that the uncontrolled continuation of these economic development models would lead to the annihilation of the natural capital that sustained millions of people as well as the planet's biodiversity. In the vocabulary of the time, concepts such as "sustainable development" and "environmental policies" began to resonate much more with public policy makers. The loss

TO TALK ABOUT THE SEA AND MARINE RESOURCES WAS URGENT FOR SEVERAL REASONS, INCLUDING THE FACT THAT COASTAL AREAS HAD BEEN OVERLOOKED BY CONSERVATION EFFORTS FOR DECADES.

of biodiversity and the degradation of ecosystems became a part of the public consciousness and, for the first time, society began collectively worrying about emblematic species in Latin America such as the jaguar, the harpy eagle, and even some further afield, such as the panda bear.

One event that certainly contributed to this new way of understanding conservation was the Earth Summit, celebrated in 1992 in Rio de Janeiro, Brazil. There, the Latin American and Caribbean Commission on Development and Environment –part of the United Nations Development Program (UNDP)– agreed on the urgency of sustainable environmental development in the region. During this meeting, proposals emerged to address environmental degradation in Latin America and other places around the world. Priorities included the environment and human settlements; ecosystems and biological heritage; and marine and coastal resources,[4] to name but a few. This event underscored the need for the support of governments and institutions able to contribute financial, technical and economic resources towards environmental goals.

For decades the coasts were territories largely absent from conservation efforts. With few exceptions, until the nineties, protected area projects in most Latin American countries focused on terrestrial conservation, with declarations incorporating rainforests, rivers, forests, glaciers, deserts and chaparral, among other ecosystems, into their protected areas. A pioneer

4 M. Fonseca Borrás, "América Central: Algunas respuestas a la problemática ambiental," Revista Estudios 14–15 (1997): 71–88.

in the protection of the Mesoamerican Reef was Belize; beginning in the eighties, it understood that tourism (and other activities on the reef) would become a crucial engine for economic development. Local scientists and foreign organizations, among which Janet Gibson and the Belize Audubon Society stand out, carried out a campaign with local residents and the Belize government to establish one of the incipient nation's first reef reserves, the Hol Chan Marine Reserve. Legally constituted in 1987, it established rules and calmed tensions between tourism operators who wanted to conserve the reef and fishermen whose catch volume had diminished due to overfishing.[5] This project, developed over five years, had support from the World Wildlife Fund (WWF) and the US Agency for International Development (USAID); it set the precedents for the declaration, in 1994, of the Belize Barrier Reef Reserve System as a World Heritage Site of the United Nations Educational, Scientific and Cultural Organization (UNESCO). At the same time, Belize expanded its commitment to marine conservation with its declaration of the Glover's Reef (1993), Sapodilla Cayes (1994), and Bacalar Chico (1996) Marine Reserves.[6]

In Guatemala, the end of the dictatorship in 1985 gave rise to a surge in civil society organizations, including a number of environmental ones, that initially focused on protecting rainforests and forests. At the end of the nineties, however, that perspective began to change: efforts to conserve the reefs in Mexico, Belize and Honduras convinced Guatemala to look towards the Caribbean too. Although Guatemala has the smallest surface area of the MAR corals, the scientific community soon recognized that Guatemala was a key player in reef conservation. This was because three large rivers that cross it—

5 C. Garaway and N. Esteban, *The Impact of Marine Protected Areas on Poorer Communities Living in and Around Them: Institutional Opportunities and Constraints. Appendix 3 – Case Study of Hol Chan Marine Reserve, Belize (December, 2002)*, in I. Lutchman, ed., *Marine Protected Areas: Benefits and Costs for Islands* (Ámsterdam: WWF the Netherlands, 2005).

6 *Half Moon Caye and Blue Hole Natural Monuments Management Plan 2008–2013*, prepared by Wildtracks for Belize Audubon Society and Forest Department, RRIS-BIOPAMA, p.16. https://rris.biopama.org/sites/default/files/2019-03/BZ1d.6-HMCNM_BHNM_Mngmt_Plan.pdf

the Sarstún, Dulce and Motagua—carry sediments and solid waste to the MAR. Guatemala is also home to a significant expanse of coastal forests, the conservation of which is crucial for aquatic health. Despite this, the country didn't establish a regulatory framework specific to the protection of reefs. Rather it prioritized the conservation of terrestrial zones, rivers, and coasts including the Cerro San Gil Springs Protection Reserve (1996), and the wildlife refuges of Bocas del Polochic (1996) and Punta de Manabique (2005).[7]

The nineties were also crucial for conservation in Honduras. While this country had already taken the important steps of creating the Barras de Cuero y Salado Wildlife Refuge (1987) and the Cayos Cochinos Archipelago Natural Marine Monument (1993),[8] it doubled down on its efforts in 1994 when it decreed the protection of some 79,000 hectares of Punta Sal National Park (later renamed Jeannette Kawas). The explanatory memorandum states that "Punta Sal possesses ecological resources such as wild flora and fauna, coral reefs, sea turtle nesting sites and marine life of incalculable value, characteristic of a natural ecosystem suitable for scientific research […] making it a unique area of its kind in our country."[9]

Mexico created a number of protected areas that incorporated reefs beginning in the eighties, including the Costa Occidental de la Isla de Cozumel Refuge Zone for the Protection of Marine Flora and Fauna (1980), which became Arrecifes de Cozumel National Park (2000); the Sian Ka'an (1986) and Arrecifes de Sian Ka'an Biosphere Reserves (1998); the Banco Chinchorro Biosphere Reserve (1996); the Arrecife de Puerto Morelos (1998) and Isla

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7 *Decreto 23-2005, Ley que declara Área Protegida el Refugio de Vida Silvestre "Punta de Manabique",* Congreso de la República de Guatemala, Diario de Centro América, no. 35 (17 March 2005): 3. https://conap.gob.gt/wp-content/uploads/2019/08/21.-Decreto-23-2005-Punta-de-Manabique.pdf

8 Instituto Nacional de Conservación y Desarrollo Forestal, Áreas Protegidas y Vida Silvestre (ICF), Áreas marinas y costeras del Sistema Nacional de Áreas Protegidas de Honduras. In Reef Resilience: 9–10 https://reefresilience.org/wp-content/uploads/Informe-AP-Marinas-y-Costeras_HONDURAS-final.pdf

9 Justia Honduras, *Decreto 154: Ley de creación del Parque Nacional Punta Sal.* (28 December 1994).

AS MORE PROTECTED AREAS WERE ESTABLISHED IN THE MAR COUNTRIES, A QUESTION EMERGED: HOW WOULD THE CONSERVATION OF THESE NATURAL TREASURES BE FUNDED IN THE LONG-TERM?

Contoy National Parks (1998) where the Islaché reef group is located, the northernmost reef in the MAR; and the Arrecifes de Xcalak National Park (2000) on the border with Belize. It also designated the western coast of Isla Mujeres, Punta Cancún and Punta Nizuc as a National Park in 1996.

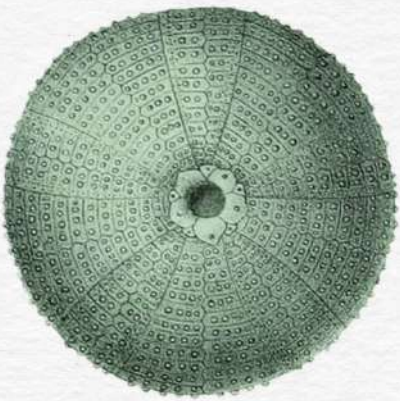
As more protected areas were established in the MAR countries, a question emerged: how would the conservation of these natural treasures be funded in the long-term? There was a paradox not so unlike that of Darwin's corals: the great biological richness of our planet is concentrated in regions where governments don't necessarily have the financial resources for patrols, monitoring, scientific analysis and impact assessments required to provide optimal protection for natural areas and to secure their long-term conservation. In addition, these protected areas are often located in places where the societal pressure to convert nature into economically productive spaces is constant, ranging from calls from small-scale farmers and livestock producers to expand the agricultural frontier to calls from hotel owners to convert rainforest and mangrove swamps into private property and build resorts for foreign tourists. Without consistent funding for conservation, protected areas essentially become paper parks.

In response to these challenges, the nineties also witnessed the genesis of environmental funds—finance mechanisms that support biodiversity conservation and help pay for the recurring costs of protected area management. These funds were intended to promote conservation and to create and strengthen institutional links. Many bilateral and multilateral agencies recognized these funds as key mechanisms for solidifying conservation strategies. According to Jane W. Jacqz, around 1994 there were around 21 funds in operation around the world, which speaks to the growth of this form of capital during these years.[10] And one of the most propitious places for a regional environmental fund was, in fact, the Mesoamerican Reef.

10 J. W. Jacqz, 'Preface', in Ruth Norris, ed., *IPG Handbook on Environmental Funds: A Reference Guide for the Design and Operation of Environmental Funds* (n.p.: Inter-Agency Planning Group, 1999), 7.



Digital watercolor: Juan Arturo Piña Martínez



PART II
MAR FUND: GENESIS OF AN IDEA



Mesoamerica as a Collaborative Space

Near the end of the 20th century, while the conservation movement was flourishing in Latin America and the Caribbean, an important discussion began. Scientists and representatives of non-governmental institutions that worked in the North American rainforests began to ask themselves a question that would change the direction of environmental thinking in the region: how can we name, or create a concept or unifying idea for such a vast and vital territory as a rainforest spanning more than 14 million hectares that extends across the border regions of southern Mexico and northern Central America? Far from reflecting on a geographical term that would require the setting of boundaries, specialists were searching for a concept that made reference to the enormous rainforest region with an ecological function, and also a cultural one; a notion that encompassed a territory that shared some cultural traits, as well as an interest in its conservation. This is how the "Selva Maya" (Mayan Jungle) name was born, an ecological and cultural mosaic of incalculable value, but also a fragile region, under threat precisely because of the riches it contains.

When the Selva Maya is mentioned, the immediate image that comes to mind is of a tropical rainforest in which echoes of ancient civilizations are heard, where thousand-year-old kapok trees, jaguars, monkeys and macaws survive. Selva Maya evokes the natural grandeur and historic depth of the rainforest in two words. As a conservationist notion, it helped to shape a region of important biodiversity, and simultaneously became a part of the language and the regional discussions about conservation. This umbrella term, with an ecological and cultural function, spoke of a territory that shared some cultural traits and that acquired meaning when discussing the protection, conservation and future of the area.

The idea of the Selva Maya was crucial. Around it, a cross-border organization began to form, comprised of civil society and institutional actors that wanted to stop the loss of biodiversity. Together they worked on conservation strategies and methods, overcoming the obstacles associated with geographical and political borders.[11] At the end of the eighties, marine conservation was still not an environmental priority; in Latin America the focus was primarily on land. However, during those years there were those who looked further than the coastline and began to immerse themselves in new waters. One of them was Juan E. Bezaury-Creel, a pioneer in reef conservation in Mexico, affiliated with Amigos de Sian Ka'an (Friends of Sian Ka'an), a Mexican organization dedicated to conservation and sustainable development of the Yucatán peninsula. Bezaury-Creel began to work with a team who set out to describe, evaluate and map the existing reefs in Quintana Roo. Shortly afterwards, the idea of the Great Mayan Barrier Reef was proposed as a cross-border management model that involved the four countries (Mexico, Belize, Guatemala and Honduras) that share this thousand kilometer-long reef system on the Caribbean coast. These nations shared various ecosystems but were separated by borders and different legal systems.

11 H. Laako, D. Ramos, E. Pliego and B. Márquez, "Eco-frontier building in the Maya Forest borderlands", *Estudios fronterizos* 23 (2022): e105, 3. https://doi.org/10.21670/ref.2221105.

THE IDEA OF THE SELVA MAYA WAS CRUCIAL. AROUND IT, A CROSS-BORDER ORGANIZATION BEGAN TO FORM, COMPRISED OF CIVIL SOCIETY AND INSTITUTIONAL ACTORS THAT WANTED TO STOP THE LOSS OF BIODIVERSITY.

By 1994, the newly created Secretaría del Medio Ambiente, Recursos Naturales y Pesca, or SEMARNAP (Mexico's Ministry of the Environment, Natural Resources, and Fisheries) was responsible for environmental protection and natural resource management. The institution became interested in the concept of the Selva Maya as it provided a cross-border management model in which governmental and international actors could collaborate on conservation efforts. Drawing on the technical and scientific information that Amigos de Sian Ka'an had collected about the reef, and in conjunction with the North American Commission for Environmental Cooperation (CEC), SEMARNAP commissioned the design of a strategy for the conservation of the reef with the intention of securing a cross-border initiative. "The subject of reefs began to become a priority," according to Julia Carabias—who served as Secretary of the Environment from 1994 to 2000.[12] During her tenure, she promoted the federal protection of reefs, with the support of then-president Ernesto Zedillo Ponce de León, whose love of diving was known among his peers.

The cross-border initiative coincided with debates and studies that emerged at the time, such as the report "The Global 200: A Representation Approach to Conserving the Earth's Most Biologically Valuable Ecoregions," by David M. Olson and Eric Dinerstein, published in 1998. Promoted by WWF, the document identified representative examples of each type of habitat, globally. The idea was important because it also recognized that conservation

12 J. Carabias, personal communication, July 28, 2025.

actions were generally carried out at the national level, whereas ecoregions did not always align with political boundaries. Consequently, the authors proposed the concept of an ecoregion as "a relatively large unit of land or water containing a characteristic set of natural communities that share the vast majority of their species, dynamics, and environmental conditions."[13] For the researchers, conceiving an ecoregion required ignoring borders and thinking in units of conservation on a regional scale that spanned similar biological communities. The research distinguished 200 priority ecoregions for conservation, and the "Mesoamerican Reef" was identified as an ecoregion within which Belize, Guatemala, Honduras and Mexico shared a biological region.[14]

During these years, Mexico participated as an observer in the Central American Integration System (SICA), an institutional mechanism created in 1991 to serve as a channel of communication among Central American governments. Mexican technicians and scientists participated through SEMARNAP, which launched and promoted—diplomatically and at the international level—the initiative known as the Great Mayan Reef, which soon became the Mesoamerican Reef (MAR). In the words of Bezaury-Creel, "SEMARNAP and the Central American Commission on Environment and Development (CCAD) provided the political leadership needed to launch the Mesoamerican Caribbean Reef Systems initiative."[15] From the outset, the concept of the MAR considered a "space for ecological collaboration."[16] With this concept in mind, the collaboration of civil society organizations (both national and international), together with government agencies, citizen groups, and research groups, made it possible to promote a more vigorous study and conservation of this ecoregion.

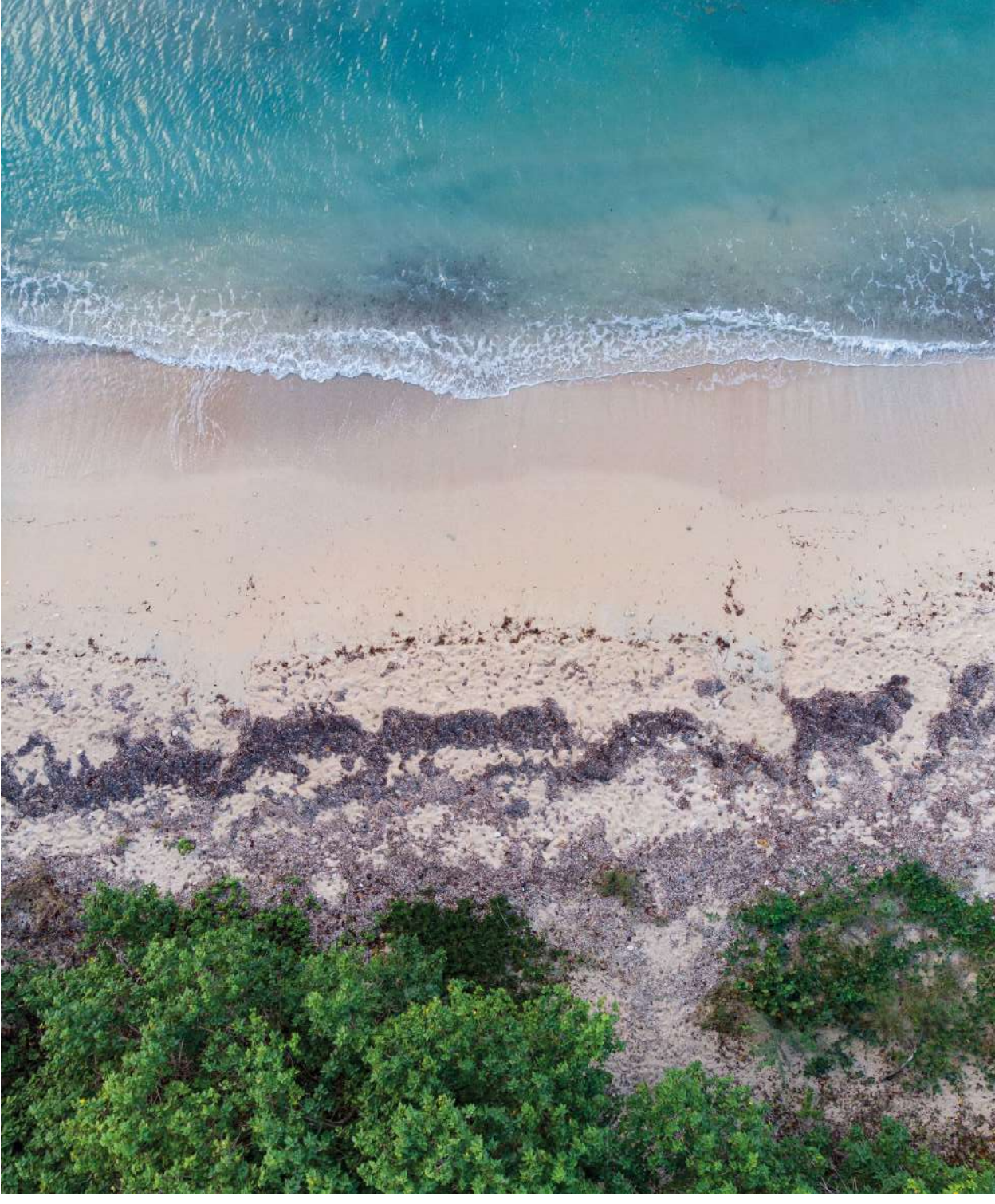
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13 D. M. Olson and E. Dinerstein, "The Global 200: A Representation Approach to Conserving the Earth's Most Biologically Valuable Ecoregions," *Conservation Biology* 12 (1998): 502, available at https://doi.org/10.1046/j.1523-1739.1998.012003502.x.

14 D. M. Olson and E. Dinerstein, "The Global 200: A Representation Approach to Conserving the Earth's Most Biologically Valuable Ecoregions", 508.

15 J. Bezaury-Creel, personal communication, June 16th, 2025.

16 H. Laako *et al.*, "Eco-frontier building in the Maya Forest borderlands", 3.



Coastal scenery.
Photo:The Ocean Agency



The Tulum Declaration

On June 5th, 1997, on World Environment Day, four leaders met under the Caribbean sun in the historic city of Tulum, in Mexico. Next to the turquoise waters of the Caribbean, the presidents of Guatemala, Honduras, and Mexico and Belize's Prime Minister signed an agreement that changed the course of conservation in the region. The piece of paper that the four leaders signed was the Tulum Declaration, committing the four nations to protecting the Mesoamerican Reef, one of the richest and yet most fragile ecosystems on the planet.

At that time, the importance of the MAR (which includes the largest barrier reef in the Atlantic Ocean), for coastal communities, marine biodiversity and ecological balance in the Caribbean was recognized. However, throughout the nineties, poorly regulated tourism, uncontrolled fishing, pollution of aquifers and rivers, and climate change were threatening the integrity of this coralline system. Action was necessary and, given the location of this barrier reef of coral and biodiversity, the first step was political commitment among the four countries.

The agreement set forth a joint strategy: it created an action plan for conservation and sustainable use of the MAR, strengthened ties among governments, shared scientific information and united technical and financial efforts. The regional action plan included the establishment of a network of protected marine and coastal areas.[17] The agreement was the formal beginning of a regional collaboration, in which a balance was sought between

17 D. Buitrago, G. Marín, and J. Fraga, "Turismo como destino: pesca, conservación de la biodiversidad y desarrollo turístico en Xcalak, un pueblo costero del Caribe mexicano." in *Turismo, globalización y sociedades locales en la península de Yucatán*, edited by Gustavo Marín Guardado, Ana García de Fuentes, and Magalí Daltabuit Godás. (Tenerife: Pasos, 2012), 88.



Mutton snapper (*Lutjanus analis*).
Photo: Ramiro de Jesús Arcos Aguilar

the protection of the environment and the wellbeing of nearby communities. Since its signing, the Tulum Declaration has been a strategic platform for cross-border cooperation in conserving the reefs, and inaugurated a joint perspective on the future of the MAR.



The Mesoamerican Reef, Laboratory of Regional Vision

By 1999, the Mesoamerican Reef had become a high priority initiative within WWF and The Nature Conservancy (TNC). Both organizations recognized its ecological importance. After the signing of the Tulum Declaration it became necessary to take action in the field. The work done by WWF within the framework of this ecoregional program included the collection of scientific data, strategic marine planning, and some initial protection efforts.

During these years, WWF invested not only in ideas, but in specific resources in the region. For example, in Mexico it collaborated in the creation of the Mexican Fund for the Conservation of Nature (FMCN); in Belize, it supported the formation of the Protected Areas Conservation Trust (PACT) while advising on the design of a system of tourist payments as a financial mechanism for conservation; and in Guatemala it supported and participated in the Fideicomiso para la Conservación en Guatemala (FCG). It was still necessary to find a participating organization in Honduras, and an effective mechanism for cross-border collaboration. Miguel Cifuentes, the WWF Central America lead, brought together his team with a clear objective: come up with a strategy that would elevate the profile of the MAR and guarantee the continuity of what had already been achieved. The goal was to ensure that the conservation efforts would endure, regardless of any change in institutional priorities.

Sylvia Marín, the ecoregional coordinator of WWF for the MAR at the time, thought that one long-term solution might be the coordinated work of an entire region. For her the question was clear: "What if the different environmental funds that existed already were to come together under a single

regional umbrella?"[18] The underlying proposal of such an idea was bold but logical: unite funds and create a regional entity that included all four countries and worked in a coordinated manner towards the protection of the Mesoamerican Reef. Despite the proposal's ambitious nature, Cifuentes backed her up. The next step was to visit the funds in the four countries to assess who would be willing to collaborate on a proposal of this magnitude. It was September 1999 when Marín began her journey around the region, with the intention of socializing the proposal and exploring the terrain, or more accurately, the waters.

Although Belize had an active marine program, Mexico and Guatemala's environmental agendas still had a terrestrial focus; therefore, an organization centering on marine conservation was novel. Environmental programs of the time did not highlight the links between the land and its impact on marine ecosystems, but the links were clear when you looked at the facts: In Yucatán, the cenotes and karst terrain allowed for invisible seepage that altered marine environments; in Belize, shrimp farming and poorly managed wastewater affected the reef; in Guatemala, the Motagua river carried water from Guatemala City, connecting it directly with marine ecosystems and contaminating them with urban waste; and in Honduras, agricultural runoff flowed directly toward the barrier reef. It was urgent to adopt what Marín identified as a "watershed approach," that is, to understand that protecting the reef ecosystem involved conserving rivers and soils and managing human activities both in and out of the water. The regional and watershed approach was therefore the key issue to be addressed in the initial meetings with the participating countries.

Lorenzo J. de Rosenzweig, cofounder and then-director of the FMCN, created in 1994, was one of the first to learn about the proposal for a regional fund. Marín remembers meeting with him in his Mexico City office to show him a folder filled with ideas, while her host listened attentively.

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18 S. Marín, personal communication, June 20th, 2025.

In Rosenzweig's eyes, the idea had the potential to transcend and innovate since it opened pathways toward securing resources with a collective focus. It wasn't just a technical proposal, but a financial one. Although he asked Marín for some time to think it over and discuss it with the FMCN's board of directors, he remembers feeling quickly enthusiastic. "Although this was neither part of our strategic plan nor our institutional plans, it seemed to me to be a good idea and great opportunity, so with the help of a lawyer from WWF we started to build the fund."

In Guatemala, the response was also immediate. Cifuentes and Marín approached María José González, who, in the late 1990s, served as executive director of what was then known as the Fideicomiso para la Conservación en Guatemala (FCG). González immediately saw the value in an ecoregional effort, one that would also build upon the research already conducted by WWF, which had concluded that the MAR was of significant ecological and economic importance. The value of an ecoregional effort such as the one being proposed seemed to her a unique opportunity, the FCG aligned itself without hesitation to the regional fund initiative.

In Honduras, however, the challenge was more complex. The Life Foundation, then the largest environmental fund in that country, was going through structural problems and eventually closed. The WWF team supported the creation of Fundación Biosfera to represent the country in the joint effort for the conservation of the MAR, which was gradually taking shape.

In Belize, members of PACT were presented with a proposal showing the environmental benefits and the real opportunities for financing, with a positive result.

After identifying representatives from all four countries and their common interests, the establishment of the regional mechanism began by way of a meticulous and coordinated process. At the end of 1999, WWF convened the

19 L. Rosenzweig, personal communication, June 3rd, 2025.

People who contributed to the creation of the MAR Fund

Esteban R. Brenes
WORLD WILDLIFE FUND

Silvia Charpentier
CONSULTANT

Miguel Cifuentes
WORLD WILDLIFE FUND

Beatriz Echenique
FUNDACIÓN BIOSFERA

Imani Fairweather
OAK FOUNDATION

Leslie Harroun
OAK FOUNDATION

María José González
FIDEICOMISO PARA LA CONSERVACIÓN EN GUATEMALA

Garry Jewett
WORLD WILDLIFE FUND

Mary McClellan
THE NATURE CONSERVANCY

Carlos Morales
WORLD WILDLIFE FUND

Sylvia Marín
WORLD WILDLIFE FUND

Lorenzo J. de Rosenzweig
MEXICAN FUND FOR THE CONSERVATION OF NATURE

Carlos Saavedra
THE SUMMIT FOUNDATION

Roger and Vicki Sant
THE SUMMIT FOUNDATION

Valerie Woods
PROTECTED AREAS CONSERVATION TRUST

first meeting of these representatives in Belize; they recognized that although Latin America had the highest concentration of national environmental funds, not a single regional fund existed that could serve as a model for this new mechanism.

During the process of designing the regional mechanism, The Nature Conservancy was invited to participate. For Sylvia Marín, this involvement was essential, as the project was not driven solely by WWF but rather needed to emerge from a collective effort. Along with the logistical and legal issues, such as the location of a headquarters, or the nature of the legal entity to manage the fund, the representatives understood the need for financial resources. The political and economic context at the time was favorable; the value of the Mesoamerican reef for its biodiversity as well as its economic potential were recognized. Diving and snorkeling tourism were advancing at a considerable pace. And Hurricane Mitch, the tropical cyclone that devastated the region in 1998, alerted the world to the importance of the reefs and mangrove swamps as natural barriers, providing coastal protection. This event underscored the pressing need for coordinated conservation work in the area.



School of grunts (*Haemulon sciurus* and *Haemulon flavolineatum*).
Photo: Fundación Albatros

THE SUMMIT FOUNDATION, A SEED AT THE BOTTOM OF THE OCEAN

Towards the final stage of the creation of an environmental fund for the Mesoamerican Reef, there was an atmosphere of enthusiasm in Latin American and the Caribbean for environmental funds. While the last details were adjusted and the institutional machinery began to work, both regions became the stage for rare financial creativity. New conservation mechanisms began to develop which diverged from traditional finance models; for example, debt conversion for conservation, known as debt swaps. These financial instruments sought to respond to the loss of biodiversity in countries in the global south, which faced onerous public debt. The initiative proposed that, in exchange for a reduction in public debt, the country in debt would commit to establishing environmental conservation projects. In this effort, the work and support provided by environmental funds and nongovernmental organizations were substantial.

The concept of "conservation finance" began to resonate more deeply in good measure, thanks to the work of Jane Jacqz and Ruth Norris. These conservation pioneers published key works about the origin and development of the region's environmental funds, providing the conceptual clarity needed to innovate in the management and procurement of resources. Through experience, the international community understood that donating funds without trustworthy institutional structures in place led to fleeting results. There was a recognition that sustainable and durable mechanisms that didn't depend on cycles of governmental financing, or ephemeral political will were key.

At the same time, the Summit Foundation was interested in a regional marine program. Its founders, Vicky and Roger Sant, believed in the principle of investing "more than in projects, in people."[20] They were interested

20 C. Saavedra, personal communication, 17th June, 2025.

in initiatives that involved local actors and wove new methods of ecosystem conservation together. The Summit Foundation took on risks in sponsoring ideas that others were hesitant to support. The Sants learned that Marín and Rosenzweig were working on a bold idea: the creation of a regional organization that joined together environmental funds from the four countries that shared the MAR. They learned that groundwork had already been laid and recognized that the initiative would support an entire region. Efforts to work at the national level were less attractive to them than supporting work covering an entire region-wide ecosystem.

Carlos Saavedra, then the director of the Marine Program at the Summit Foundation, remembers listening with enthusiasm about the first coordinated efforts to create the Mesoamerican Reef Fund (or the MAR Fund). He learned from a young age to observe interconnected ecosystems. Saavedra had previously directed WWF's Tropical Andes program, which extended from Venezuela to Bolivia. There he learned that conservation of such a vast territory needed to engage a broad range of actors, with open channels of communication. During his time at WWF, Saavedra always worked with a regional vision, so much so that when he analyzed the MAR Fund, he understood the value in and need for transferring an already well-known perspective (a transregional one) to the marine realm. He remembers that during those years there were few marine biologists available, and most of them worked in the fishing industry and from a resource extraction point of view.

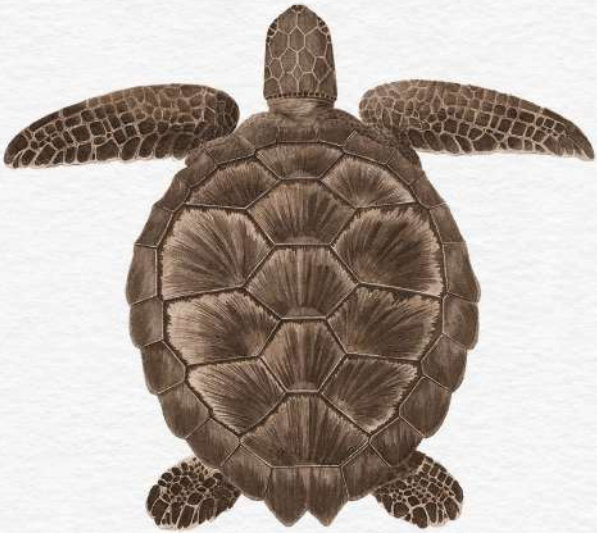
It was clear that the MAR Fund's vision was aligned with the interests of the Summit Foundation. In Saavedra's words, after his organization's team analyzed the project to decide whether to support it, a powerful idea emerged that convinced them: "One country's larva is another country's catch of the day."[21] The idea took fish as an example—creatures that do not know borders and whose larvae and young, dragged by currents, can be born in Mexican waters and then be caught some time later in Belize, or vice versa. Bearing this in mind, the foundation understood that any conservation effort that ignores interdependence between regions would have little chance of success.

21 *Ibid.*



Barracuda (*Sphyraena barracuda*).
Photo: Antonio Pastrana

The idea behind the MAR Fund was not simply substituting a marine focus for a terrestrial one, but an integration of both. In other words, the recognition that what happens on land, such as agriculture, urban growth, pollution, or deforestation, has a direct impact on the reef. The idea was to link governments, NGOs and coastal communities to protect the Mesoamerican Reef, from the mountains to the sea. It was no longer about financing isolated projects; the idea was to build a platform with long-distance reach, both in space and in time, capable of resisting the geopolitical vicissitudes of four different countries brought together by a reef.



PART III
THE DEVELOPMENT OF THE MAR FUND



2004–2008: Create the Fund and Plan the Journey

The Mesoamerican Reef Fund (MAR Fund) was created in 2004 as a regional environmental fund and within two decades has transformed itself into a trustworthy institution, with a robust financial base and a diverse portfolio of innovative programs and financial instruments serving the Mesoamerican Reef and its residents.

Known as the Mesoamerican Reef Fund, it was legally registered on the 11th of February 2004 in Delaware, in the United States of America, as a 501(c)(3) non-profit organization, with the mission of mobilizing regional finance for the conservation, restoration and sustainable use of the MAR. That same year the first meeting of its board of directors took place and Lorenzo J. de Rosenzweig was chosen as its first president. In 2005 María José González was hired as executive director. She had been the director of the Fideicomiso para la Conservación en Guatemala.

During the initial years, the MAR Fund was supported by the Summit Foundation, which provided funds for the development of the administrative framework and the resource procurement and communication strategies, which brought the institution to life. In 2005 the office in Guatemala City was opened and strategic priorities were defined.

In 2006 the MAR Fund joined the Latin American and Caribbean Network of Environmental Funds (RedLAC) and published calls for proposals to establish or strengthen marine protected areas and undertake community-based fisheries initiatives. Between 2006 and 2008 the Fund clarified its regional management "niche," and in 2007 facilitated the first exercise in prioritizing MAR protected areas. In 2008, as part of the Second International Year of the Reef, MAR Fund strengthened its role as a facilitator between international donors and implementing organizations through new calls for proposals and projects.

Remembering the formative years of the MAR Fund, Imani Fairweather of the Oak Foundation, comments that the work of the MAR Fund focused on capacity building among local stakeholders involved in reef conservation. During those years there was a notable interest in supporting the conservation of the MAR, both on a local, hemisphere-wide and regional level, which the MAR Fund managed to make the most of.

The Oak Foundation played an important role as a donor when it granted almost US$6 million for projects in the region between 2008 and 2022. Other donors that contributed to the MAR Fund in those early years were: The Ocean Foundation, TNC, WWF, Compton Foundation, Packard Foundation, Fundación Avina, Conservation International, USAID, Marisla Foundation/Global Greengrants Fund, Curtis and Edith Munson Foundation, Oak Hill Fund and Henry Foundation, among others.

2009–2011: From a Heritage-Based Vision to the First Major Leap Forward

MAR Fund adopted its second five-year strategic plan in 2009 and reaffirmed the priority objective of mobilizing endowment funds. During these years, the fund continued to operate with non-endowment resources, but now with a clearer strategy to secure endowment funds that would enable long-term action within the MAR.

The difference between sinking funds and endowment funds is as follows: while the former are funds that must be spent, depleted, and accounted for, endowment funds become institutional capital or assets and, therefore, offer something more enduring: the generation of long-term returns.

A key financial milestone for the MAR Fund was met in 2010 with the signing of the project "Conservation of Marine Resources in Central America, Phase I." The German Cooperation, through KfW, provided 5 million euros of sinking funds to strengthen four priority protected marine and coastal areas. Over the years, the relationship with KfW would become one of the most important partnerships in the history of MAR Fund, both because of the amount of resources mobilized for the region and because of the bank's extraordinary technical support and the long-term nature of the collaboration.

Another turning point took place in December 2011, when MAR Fund received its first endowment contribution from KfW for 10 million euros. This allowed for the structuring of an investment fund that would generate earned income for the recurrent financing of the institution's operating costs and its projects in the MAR. With this contribution, MAR Fund's identity was consolidated as a regional environmental fund with a stable financial foundation to support partners implementing projects in Mexico, Belize, Guatemala and Honduras.

During these years, the MAR Fund also received support from the National Oceanic and Atmospheric Administration (NOAA), the Overbrook Foundation, and others. It also partnered with Global Giving through which it began to receive resources for targeted initiatives.



2012–2014: Consolidating Legacy and Strengthening Alliances

In 2012, MAR Fund began field activities for the project "Conservation of Marine Resources in Central America, Phase I." The project's 5 million euro grant, formalized in 2010, made it possible to consolidate infrastructure, enhance monitoring and update management plans in the selected protected areas (among other activities), and to strengthen collaboration with communities and include them in the management of natural resources in these areas. That year, the MAR Fund also funded six proposals in seven marine protected areas through the Small Grants Program, combining endowment funds with direct-use or extinguishable grants.

In 2013, a separate agreement was signed for Phase II of the same project, with an additional investment of 5 million euros, this time targeting five marine and coastal areas in the region. That same year, a financial agreement was finalized with the French Facility for Global Environment (FFEM, by its French acronym) to contribute 1 million euros to the MAR Fund's endowment. With this support, the FFEM made a commitment to an innovative endowment model that involves civil society and local communities in the management of natural resources. It would later also become a technical and financial partner for initiatives such as MAR Fish and the protection of the Cayman Crown reef.

Constance Corbier, who was then the manager of the FFEM project, highlights that the MAR Fund "was the first project of its kind (supported by an endowment donation from FFEM)" and turned out to be "a successful model for financing small NGOs that otherwise would have been very difficult to finance."

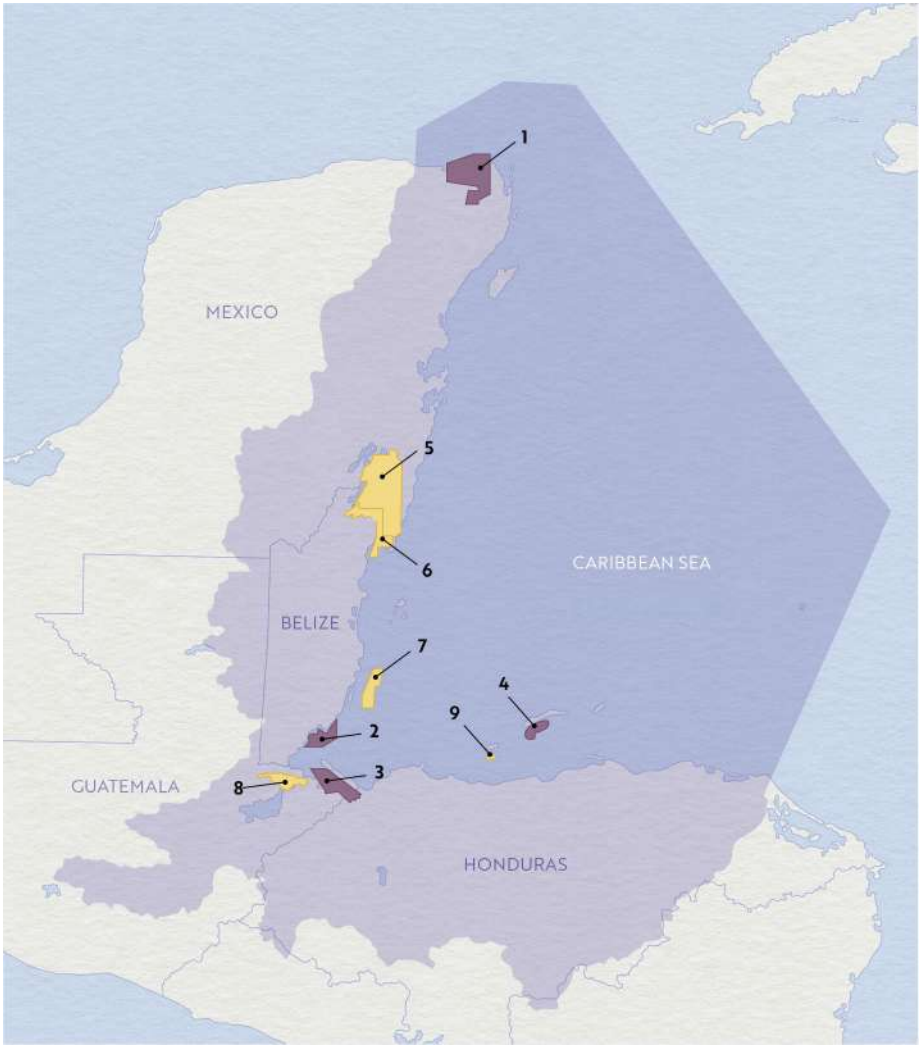


French angelfish (*Pomacanthus paru*) and lettuce coral (*Agaricia agaricites*).
Photo: Ana Giró

In 2014, KfW made a second endowment donation to the MAR Fund of 7 million euros, consolidating the Fund's capital base and allowing it to project a decade of institutional growth. With these resources, the MAR Fund launched the Reef Rescue Initiative. It also developed a regional strategy to control lionfish (an invasive species) and supported ecoregional efforts such as the Tri-National Alliance for the Conservation of the Gulf of Honduras (TRIGOH) and the Connectivity Network, widening the scope of action beyond specific projects and towards more diverse collaborative platforms.

The United Nations Environment Program (UNEP), JRS Biodiversity Foundation, National Fish and Wildlife Foundation (NFWF) and the University of Miami were some of the donors who joined the effort of the MAR Fund during this period.

MAP OF THE MARINE AND COASTAL PROTECTED AREAS SELECTED IN PHASES I AND II



MCPAS Phase I
MCPAS Phase II
Mesoamerican Reef Ecoregion

PHASE I

1 Yum Balam Flora and Fauna Protection Area, Mexico
2 Port Honduras Marine Reserve, Belize
3 Punta de Manabique Wildlife Refuge, Guatemala
4 Sandy Bay-West End Special Marine Protection Zone, Honduras

PHASE II

5 Santuario del Manatí Bahía de Chetumal State Reserve, Mexico
6 Corozal Bay Wildlife Sanctuary, Belize
7 South Water Caye Marine Reserve, Belize
8 Río Sarstún Multiple Use Area, Guatemala
9 Turtle Harbour – Rock Harbour Marine Protection Zone, Honduras



Cozumel, Mexico.
Photo: Lorenzo J. de Rosenzweig



2015–2017: Regional Consolidation and Instrument Diversification

2015 marked the tenth anniversary of MAR Fund's operations. To celebrate, it organized a regional workshop to update the prioritization of protected areas and added 14 priority areas to the list. This exercise made it possible to incorporate new information and refine the area selection methodology, thereby making participation of MAR sites with current management plans more open and competitive.

In 2016, Phase I of the KfW-funded project concluded in four protected areas: Yum Balam (Mexico), Port Honduras (Belize), Punta de Manabique (Guatemala), and Sandy Bay West End (Honduras). This paved the way for a new cycle of learning about marine and coastal management, local governance, and financial sustainability. That same year, initiatives such as the Belize Marine Fund (BMF) were launched, and the Caribbean–Pacific Alliance for Marine Conservation Finance was signed with the Caribbean Biodiversity Fund (CBF) and PACIFICO, expanding the organization's geographic and thematic scope.

In addition, the Reef Rescue Initiative was expanded, a Geographic Information System was developed for the MAR, and technical work began that would later lead to the design of a parametric insurance policy for reefs in collaboration with a leading global company in the field.



Bull shark (*Carcharhinus leucas*).
Photo: Antonio Pastrana

PARAMETRIC INSURANCE: FINANCIAL INNOVATION IN SERVICE OF THE REEF

After a hurricane passes, we usually focus on the damage on land: washed-out roads, fallen trees, flooded farmland, and damaged homes and buildings. But there is damage that occurs underwater, and its invisibility does not make it any less tragic.

Although reefs normally act as a buffer—corals provide the first line of defense against tides and waves—coral formations are also frequently victims of hurricanes, which break them apart and scatter them into the depths of the ocean like plants uprooted by a storm.

Unlike a house or a car, a reef is not a product with a precise market value. However, damaged coral can be repaired through post-disaster interventions and patient restoration techniques. With this in mind, Lorenzo J. de Rosenzweig and María José González, the institution's board president and director, met in Berlin in 2018 with the reinsurance and financial services firm Willis Towers Watson (WTW) to develop an insurance policy that would cover damage to the MAR in the event of hurricanes.

They formed an interdisciplinary group that agreed that parametric insurance was the appropriate mechanism to protect the reef. These products are common in agriculture and operate based on a series of pre-established parameters—in the case of the reef, wind speed—which, if met, trigger the insurance payout.

"When wind speeds exceed a threshold that we know affects the reef, the insurance policy is triggered, allowing us to receive payment without having to assess the damage," explains María del Carmen García, director of the Arrecife de Puerto Morelos National Park. "If we don't help the reef, which is already ailing, stabilize as soon as possible, the coral fragments damaged by the hurricane could be lost."



Coral restoration.
Photo: Juan Carlos Huitrón-Baca

The parametric insurance for the MAR is a major financial innovation designed to increase resilience to climate change. Today, it covers 10 protected areas across the four countries in the region, and it has already been triggered once, in 2022, after Hurricane Lisa struck the Turneffe Atoll Marine Reserve in Belize. MAR Fund was responsible for collecting the insurance proceeds and subsequently distributed the funds to the Turneffe Atoll Sustainability Association (TASA), which coordinated the emergency response.



2018–2019: Thematic Networks and Applied Science

In 2018, the participatory development of the MAR Reef Restoration Network's 2019–2020 strategic plan was launched. This process harmonized methodologies, strengthened local capacities, and fostered the exchange of experiences in coral restoration. As a result, the network established itself as a model for laboratories, organizations, and governments that were beginning to promote initiatives such as coral nurseries and habitat restoration.

The following year, with support from the FFEM, MAR Fund launched the MAR Fish project, a regional network dedicated to understanding, monitoring, and protecting fish spawning grounds in the MAR. The initiative focused on fish spawning aggregations (FSAs)—natural and predictable events in which species of high commercial value, such as snappers and groupers, congregate in large numbers, increasing their vulnerability to overfishing. The program brings together scientists, fishermen, and protected area managers to optimize the management and economic diversification of fishing communities.

Also in 2019, the MAR Fund began developing the regional strategy for the conservation and restoration of mangroves for the Mesoamerican Reef, recognizing the role of these ecosystems as a natural barrier, a fish nursery, and a carbon sink. In addition, a regional meeting was held on stony coral tissue loss disease, with the aim of coordinating efforts between the Belize Marine Fund and the Reef Rescue Initiative.

MAR FISH

In 2019, thanks to a donation of 1,115,800 euros from the French Facility for Global Environment, the program "Knowledge, Monitoring, and Protection of Mesoamerican Reef's Fish Spawning Aggregations (MAR Fish)" was launched as a network of regional partners seeking to strengthen the conservation of sites where fish spawning aggregations occur.

Known as FSAs, these aggregations occur when individuals of the same species gather in large numbers following natural cycles, in response to environmental cues that may include the phases of the moon, water temperature, or currents. Protecting the sites where these aggregations occur is crucial to ensuring the reproduction and population health of these species.

During MAR Fish's years of operation, numerous workshops and marine monitoring activities were organized, and economic diversification strategies targeting fishing communities were developed. Support was also provided for a regional data platform on FSAs, contributing to the sustainable management of marine resources in the MAR.



Goliath grouper (*Epinephelus itajara*).
Photo: Ramiro de Jesús Arcos Aguilar



2020–2021: Climate Crisis, Insurance and Ridge-to-Reef Integration

In 2020, the year of MAR Fund's fifteenth anniversary, the "Regional Strategy for the Management, Conservation, Restoration, and Monitoring of Mangroves in the Mesoamerican Reef" was launched; and several activities aligned with the strategy were carried out, including pilot mangrove restoration projects. At the same time, the design of parametric reef insurance progressed in collaboration with WTW, and hurricane response coordinating committees were established in Mexico, Belize, and Honduras. Support was provided for the protection of the Cayman Crown Reef through the creation of a ten-year no-fishing zone in Guatemala and through the expansion of the Sapodilla Cayes Marine Reserve in Belize. Carlos Vijil Moreno was also elected as president of the board of directors, replacing Lorenzo J. de Rosenzweig after 15 years of successful leadership as president of MAR Fund.

During this same period, MAR Fund operated as a sub-implementer of the project "Integrated Transboundary Ridge to Reef Management in the Mesoamerican Reef Ecoregion" or "Ridge to Reef" (MAR2R), implemented by the CCAD with support from WWF and the Global Environment Facility (GEF), thereby consolidating the vision of integrated management that connects rivers, watersheds, and reefs.

In 2021, MAR Fund accepted a 13 million euro grant from KfW for Phase III of the project, building on the achievements of Phases I and II. It also purchased the first parametric insurance policy under the Reef Rescue Initiative to cover four sites, with support from the InsuResilience Solutions Fund and the Ocean Risk and Resilience Action Alliance.

In 2021 MAR Fund also developed an institutional Environmental and Social Management System (ESMS) to minimize and mitigate potential risks and negative impacts of MAR Fund grants, complying with the safeguards that most bilateral and multilateral donors require of financial intermediary organizations such as MAR Fund.

CAYMAN CROWN

In 2013, when Ana Giró, a prominent marine biologist in the region, heard about some "rocks" in the depths of the Gulf of Honduras—a considerable distance offshore from Punta Manabique, Guatemala—her curiosity was piqued. The fishermen described a site teeming with life, rich in species, with all the characteristics of a reef. But was it really a reef? If so, they were looking at one that did not appear on any nautical chart, much less on MAR maps. A large number of ships sailing toward Puerto Barrios, Guatemala, passed right over this site without anyone noticing it. Could it be a secret hidden in plain sight? Giró, Guatemala Coordinator for Healthy Reefs for Healthy People (HRHP), decided to investigate the mystery in person.

Once she descended to the underwater site, Giró was astonished. She found an enormous reef (more than 90 square kilometers) with a significant surface of living coral. HRHP had been monitoring reefs in the MAR for over a decade, which is why Giró understood that she was seeing something exceptional.

HRHP, which was one of MAR Fund's first partners, tracks a set of indicators to measure the MAR's health. Its founder, Melanie McField, developed a methodological process that led to 57 indicators and a report card to measure the health of the reef. HRHP was therefore the ideal organization to assess the significance of this newly discovered reef.

As global warming has intensified and ocean temperatures have risen, the area of live coral cover in the MAR reefs has declined significantly. Following the destructive bleaching events of 2023, the average percentage of live coral on a reef in the MAR is around 17 percent.

In the years following the discovery of the new reef—which was named "Cayman Crown"—studies by HRHP determined that the area of live coral there exceeded the MAR average, making it one of the healthiest reefs in the region. The reasons for this are not entirely clear, but there

are theories. One points to bathymetry: located at depths exceeding 300 meters, Cayman Crown benefits from lower solar intensity. It is situated on the outer edges of a marine fault known as the Cayman Trench, and the upwellings of cold water from this trench lower the average temperature and flush out potential pollutants.

Given its fragility and biodiversity, conserving Cayman Crown is a top priority and an urgent matter—and MAR Fund is committed to contributing to this effort. With support from the FFEM, MAR Fund established an endowment to finance the protection of Cayman Crown in perpetuity. Its preservation, however, will require navigating a geopolitical challenge: Cayman Crown lies in waters disputed by Belize and Guatemala. Despite this, both countries have decided to protect it: Belize by extending the Sapodilla Cayes Marine Reserve and Guatemala through a no-take zone for ten years. So, despite the dispute of territorial waters, Cayman Crown finds itself protected.



Atlantic spadefish (*Chaetodipterus faber*).
Photo: Ana Giró

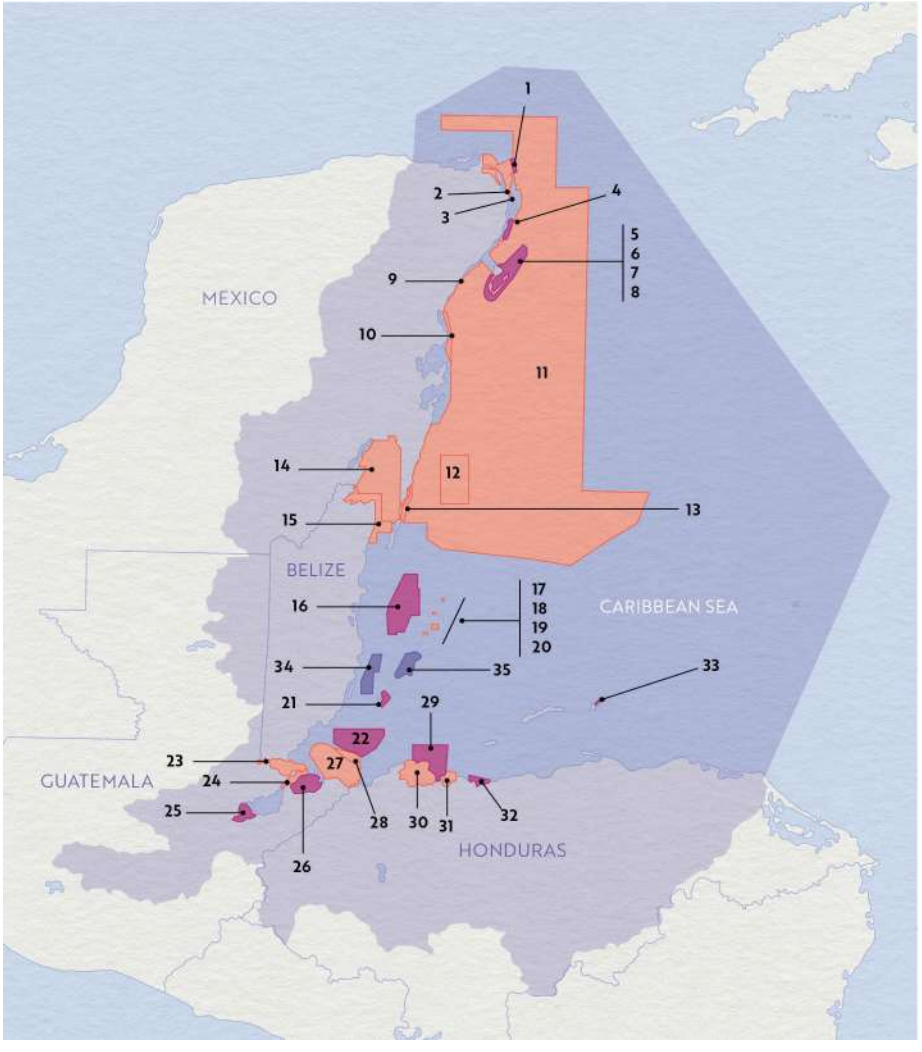


2022–2023: Financial Innovation and New Thematic Funds

In 2022, the operational details of Phase III of KfW's project were evaluated and finalized, and a regional mangrove restoration project was initiated in Mexico, Guatemala and Honduras. The mangrove project was undertaken in partnership with research institutions and local organizations. MAR+Invest, a mixed finance mechanism that fosters sustainable market solutions that benefit the MAR's health, was launched. That same year, a sub-account—the Guatemalan Caribbean Fund—was established within MAR Fund with US$3.5 million, the result of an innovative scheme for carbon credits linked to the REDD+ program established by the Guatemalan organization Fundación para el Ecodesarrollo y la Conservación (FUNDAECO).

In 2023, the first call for proposals for Phase III was published, benefiting 14 marine and coastal protected areas within the MAR and, as part of MAR+Invest, the Build & Connect component and the Acceleration Program were launched, focused on strengthening entrepreneurial capacities and sustainable business models. These efforts address a need identified by the MAR Leadership Program—an initiative designed to train and support local conservationists—to complement conservation skills with financial and entrepreneurial competencies, particularly among public officials, protected area co-managers, academics, entrepreneurs, and community leaders.

MAP OF THE MARINE AND COASTAL PROTECTED AREAS SELECTED IN PHASE III



MCPA First call for proposals
MCPA Second call for proposals
MCPA Under consideration
Mesoamerican Reef Ecoregion

PHASE III

Mexico

1 Isla Contoy National Park
2 Sistema Lagunar Chacmochuch Flora and Fauna State Refuge
3 Laguna Manatí Flora and Fauna State Refuge
4 Arrecifes de Puerto Morelos National Park
5 Porción Norte y la Franja Costera Oriental, Terrestres y Marinas de la Isla de Cozumel Flora and Fauna Protection Area
6 Selvas y Humedales de Cozumel State Reserve
7 Laguna Colombia State Ecological Park
8 Arrecifes de Cozumel National Park
9 Santuario de la Tortuga Marina Xcacel–Xcacelito Conservation Zone
10 Arrecifes de Sian Ka'an Biosphere Reserve
11 Caribe Mexicano Biosphere Reserve
12 Banco Chinchorro Biosphere Reserve
13 Arrecifes de Xcalak National Park
14 Santuario del Manatí Bahía de Chetumal State Reserve, Mexico

Belize

15 Corozal Bay Wildlife Sanctuary, Belize
16 Turneffe Atoll Marine Reserve
17 Sandbore Fish Spawning Aggregation site*
18 Blue Hole Natural Monument
19 Half Moon Caye Natural Monument
20 South Point Lighthouse Fish Spawning Aggregation site*
21 Gladden Spit & Silk Cayes Marine Reserve
22 Sapodilla Cayes Marine Reserve

Guatemala

23 Río Sarstún Multiple Use Area, Guatemala
24 Río Dulce National Park
25 Bocas del Polochic Wildlife Refuge
26 Cerro San Gil Springs Reserve
27 Punta de Manabique Wildlife Refuge
28 Corona Caimán No-take Zone*

Honduras

29 Bahía de Tela Marine Wildlife Refuge
30 Jeannette Kawas (Punta Sal) National Park
31 Punta Izopo National Park
32 Barras de Cuero y Salado Wildlife Refuge
33 Michael Rock Special Marine Protection Zone

Belize (under consideration)

34 South Water Caye Marine Reserve
35 Glover's Reef Marine Reserve

* These areas are not protected areas as such, but they were included in the call for proposals

MAR LEADERSHIP PROGRAM

The first call for applications for the Mesoamerican Reef Leadership Program (MAR Leadership) was launched in 2010 by the Mexican Fund for the Conservation of Nature (FMCN), one of the four founding members of MAR Fund. Since then, an annual cohort has been run, with the goal of selecting between 15 and 25 participants per cohort. "Its objective is to strengthen technical and managerial capacities to advance marine and coastal conservation projects in the Mesoamerican Reef," explains María Eugenia Arreola, the program's director, who now leads Sureste Sostenible, an environmental organization that operates in the Yucatán Peninsula.

Arreola was involved in the program's design phase, alongside María José González, Carlos Saavedra (representing the Summit Foundation—the organization that provided the initial funding), and Lorenzo J. de Rosenzweig, executive director of the FMCN, who served on the Executive Committee responsible for creating and structuring MAR Leadership. For its first 10 years, the program operated as part of FMCN in close collaboration with MAR Fund.

The program focuses on strengthening skills such as negotiation and conflict resolution, strategic communication, leading high-performance teams, facilitating fundraising processes, and advocating for public policy.

In 2014, MAR Fund started providing financial support for the MAR Leadership Program. Between 2010 and 2023, MAR Leadership supported more than 65 socio-environmental projects and strengthened the capacities of 139 leaders in the region. Several MAR Leadership participants have advanced to positions of greater responsibility in strategic sectors across the four countries in the region, enabling them to influence issues related to public policy, fisheries, and waste management, among others. As a result of the bonds forged through MAR Leadership, these professionals have close and collaborative relationships with each other.

Since 2022, MAR Leadership has been operating as part of the Mexican organization Sureste Sostenible.



Bar jack (*Caranx ruber*).
Photo: Ana Giró



2024–2025: Scaling Impact by Celebrating 20 Years

In 2024, MAR Fund launched the second call for proposals for Phase III, encouraging joint proposals involving at least two protected areas. It also established a guarantee fund for MAR+Invest to facilitate access to concessional loans for ventures related to the MAR. The following year, Phase III supported eight proposals in sixteen marine and coastal areas, deepening cross-border collaboration and the integration of marine-coastal landscapes in the region.

The fifth parametric insurance policy for reefs was acquired in 2025, protecting ten Marine Protected Areas (MPAs) along the MAR. At the same time, MAR Fund continued to support high-impact initiatives such as the West End wastewater treatment plant in Roatán, in coordination with Coral Reef Alliance (CORAL) and other local partners. This initiative is now a model for sanitation and community-based management to protect Honduran reefs.

2025 marked MAR Fund's 20th anniversary, with the disbursement of the first concessional loans from MAR+Invest and the launch of the "Women for the MAR" project, aimed at strengthening women's leadership by supporting women-led enterprises in coastal communities across the region. That year, Yvonne Ramírez took office as the third president of the MAR Fund Board of Directors, succeeding Carlos Vijil, leading to a new era of leadership and institutional continuity.

HOPE FOR HONDURAN REEFS: THE WEST END WASTEWATER TREATMENT PLANT

Honduras is home to some of the most threatened coral reefs in the region,[22] and among the four MAR countries, it is perhaps the one that has faced the most complex recent political history: it has endured crises of insecurity, coups d'état, and natural disasters, including Hurricanes Mitch (1998), Eta (2020), and Iota (2020). According to the Climate Risk Index (CRI), Honduras was one of the three countries most affected by extreme weather events associated with global warming between 1995 and 2024.[23]

In recent years, despite its natural and archaeological attractions, mainland Honduras has received little international tourism; however, the situation is different on its Caribbean coast: the country has become the second-largest cruise destination in the MAR, with a huge influx of visitors concentrated almost exclusively on the Bay Islands, especially Roatán, the largest of them.

The Bay Islands are distinct from the rest of Honduras, even in terms of culture. Thanks to the British colonial presence, for example, Creole English is the predominant language. The islands are also home to Honduras' best-preserved coral reefs, which are one of the country's main tourist attractions. Data from the Honduran Institute of Tourism indicate that Roatán welcomed 447 cruise ships and nearly 1.7 million visitors in 2024.[24] This has led to increased income for local communities and higher tax revenues, but it has also resulted in uncontrolled urban growth and negative impacts on the natural environment.

22 Healthy Reefs for Healthy People, *2024 Report Card: Website Version*, 6, available at https://cdn.prod.website-files.com/66b16833c7877e9078babf9d/67361e479ff8ca23dc49ebf7_2024%20Report%20Card-website%20version.pdf.

23 L. Adil, D. Eckstein, V. Künzel and L. Schäfer, *Climate Risk Index 2026 – Summary* (Spanish) (Germanwatch, 2025), 3, available at https://www.germanwatch.org/sites/default/files/2025-11/CRI%2026%20resumen%20ES.pdf.

24 Instituto Hondureño de Turismo (n.d). *Informe visual de datos* (Interactive panel), available at https://app.powerbi.com/view?r=eyJrIjoiNzNjNzMyNDAtN2Q2MC00YTM2LWJiNTAtNDY5NGVlNGYyYThhIiwidCI6IjAxYTg2MDdjLTU1YjQtNGZmNy1iYWM2LTQzNGE4MmJmNDA3ZiJ9.

An inevitable consequence of population growth—and one of the greatest threats to coral reefs—is wastewater. In addition to being a source of pathogens, human waste, due to its high levels of nitrogen and phosphorus, triggers massive algal blooms that compete with coral for nutrients, sunlight, and oxygen. For decades, untreated wastewater discharges have been identified as one of the main threats to the MAR, which is why conservation organizations, including MAR Fund, have advocated for the implementation of wastewater treatment technologies as one of the most urgent actions to promote reef health.

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Whoever seeks to understand marine conservation in Honduras must look towards the Bay Islands. Jenny Myton, director of the Conservation Program at the Coral Reef Alliance (CORAL), told us that the reef began



Wastewater treatment plant in West End, Honduras.
Photo: Antonio Busiello

to be studied more seriously in Honduras at the beginning of the twentieth century. Myton, who comes from a scientific family, was a member of the first cohort of environmental engineers who graduated from the Catholic University of Honduras in Tegucigalpa, in the late nineties. When she began her studies, she thought life would take her to study forests. But she ended up dedicating her career to the ocean.

After she graduated, Myton approached Coral Cay Conservation, a British NGO that focused at the time on organizing educational missions. These allowed students from the United Kingdom to travel to Honduras to participate in the monitoring of the Bay Islands corals. The program offered scholarships to local students, and Jenny applied. "Many of the people [Hondurans] who work in the marine sphere were a part of Coral Cay Conservation," she told us.

In early 2000, Myton participated in the initial studies to develop a land-use plan for the reef that would include reserves, treatment plants, and a land registry cleanup.[25] The final document, supported by the Inter-American Development Bank, laid the groundwork for the establishment, in 2010, of the Islas de la Bahía National Park. In 2008, Myton joined forces with CORAL, a California-based organization. In the years that followed, a partnership developed between MAR Fund and CORAL, in which they sought to implement joint projects and support local organizations working on the conservation of the MAR.

CORAL identified illegal fishing, illegal construction, and marine pollution from wastewater as the main challenges in the Bay Islands, particularly Roatán. Starting in 2015, CORAL and MAR Fund supported improvements to the operation of the wastewater treatment plant in West End, Roatán. The organization responsible for implementing the

25 I. Valade and J. Grelot, with contributions from J. M. Laurent, "Proyecto manejo ambiental de las Islas de la Bahía" (Secretariat of Natural Resources and the Environment, May 2022), https://rsis.ramsar.org/RISapp/files/36545686/documents/HN2456_ECD190603.pdf.

project was Polo's Water Association, which has received funding six times through the MAR Fund's Small Grants Program.

"Wastewater has had the greatest impact [on the reef]. Replanting corals is more iconic, more appealing. But if you're planting in poor-quality water, it doesn't matter if you have the best technology—your corals won't survive," explains Myton.

From the outset, the West End treatment plant sought financial sustainability. It now operates through fees paid by users, assessed with the use of micrometers. The results have been significant: thanks to the improvement in the water quality in West End, Half Moon Bay, the local beach, was designated as an Ecological Blue Flag beach in 2020, as much for its commitment to sustainability as for its environmental quality.

After participating in the design, development and implementation process, MAR Fund considers the West End treatment plant to be an exemplary model not just in terms of infrastructure, but also in terms of management, with the potential to be applied in other places in the MAR.



Sapodilla Cayes Marine Reserve, Belize.
Photo: Toledo Institute for Development and Environment.

BLUE CAPITAL AT THE SERVICE OF THE MAR:

MAR+Invest

MAR+Invest (pronounced "MAR positive Invest") is a regional blended finance initiative designed to channel capital toward business models that have positive effects on the reef and contribute to the health and resilience of the MAR through its protection, restoration, or the reduction of threats. Launched in 2022, it emerged in response to one of the region's most urgent challenges: securing sustainable and scalable resources—beyond philanthropy—for reef-related business projects. MAR Fund recognized that to achieve lasting impacts, it needed to support business models capable of generating both environmental benefits and economic returns.

This initiative combines grants, concessional capital, and a guarantee fund to mitigate risks and attract private investment. With support from the Global Fund for Coral Reefs (GFCR), MAR+Invest offers technical



Green turtle (*Chelonia mydas*) and Live sharksucker (*Echeneis naucrates*).
Photo: Elisa Areano

assistance, mentoring, business development services, and access to financial instruments, focusing on sectors such as marine protected areas, wastewater treatment, sustainable fisheries, aquaculture, and ecotourism. Impact is measured using financial, environmental, and social indicators.

Given the great value of the Mesoamerican Reef, it is urgent to move forward with conservation actions. Without proper management, the region faces significant environmental and economic risks; with responsible management, however, there are real opportunities for the well-being and stability of coastal communities. This is why, looking towards 2030, MAR+Invest offers proposals to mobilize private capital, support businesses led by women and local start-ups, and strengthen the economic and environmental resilience of coastal communities.

The program's integrated impact financing model is structured around three pillars. **1. Pipeline Development.** Grants for feasibility studies and research and development, organizational strengthening and mentoring, and support for startups and NGOs in the Acceleration Program; as well as financial advisory services and fund mobilization through transactional services. **2. Monitoring and Evaluation.** Definition and tracking of environmental and social indicators to measure the positive impact of projects and companies. **3. Blended Finance.** Combines concessional and private capital for companies with positive effects on reefs, using risk-reduction mechanisms (guarantees, parametric insurance) and flexible loans for small and medium-sized enterprises (SMEs) and start-ups, including schemes based on results, revenue, or fixed payments.

All of this effort rests on a solid regional partnership comprised of MAR Fund as coordinator and provider of technical support; the Mexican Fund for the Conservation of Nature and Sureste Sostenible through its MAR Leadership program; Healthy Reefs for Healthy People for impact measurement and monitoring; New Ventures for acceleration and transactional services; and VIWALA for the design of financial instruments. Together, these organizations demonstrate that protecting the Mesoamerican Reef is not only possible but also economically viable when science, financial innovation, and entrepreneurial commitment are integrated.



PART IV
Between Mangrove Forests, Manatees and Borders: A Journey Through Conservation Projects in Chetumal Bay



Binational Waters

It's 8:30 in the morning at the Chetumal pier, and we're keeping our fingers crossed that it won't rain. Heavy, black clouds are gathering overhead, but the bay is a fragile mirror of calm. A sign that reads "WATCH OUT FOR THE ALLIGATOR" warns that there's a reptile lurking beneath these brown waters.[26]

"His name is Larry," one of the sailors tells me.

"And he's gone viral quite a few times," another adds, as if internet fame somehow made him less dangerous.

Mateo Sabido Itzá, a biologist and director of natural areas at the Institute of Biodiversity and Protected Natural Areas of the State of Quintana Roo (IBANQROO)—the agency in charge of the state's protected natural areas—invited me here this morning to learn about his institution's work. When he

26 It is actually a crocodile (*Crocodylus*), since there are no alligators in Mexico.

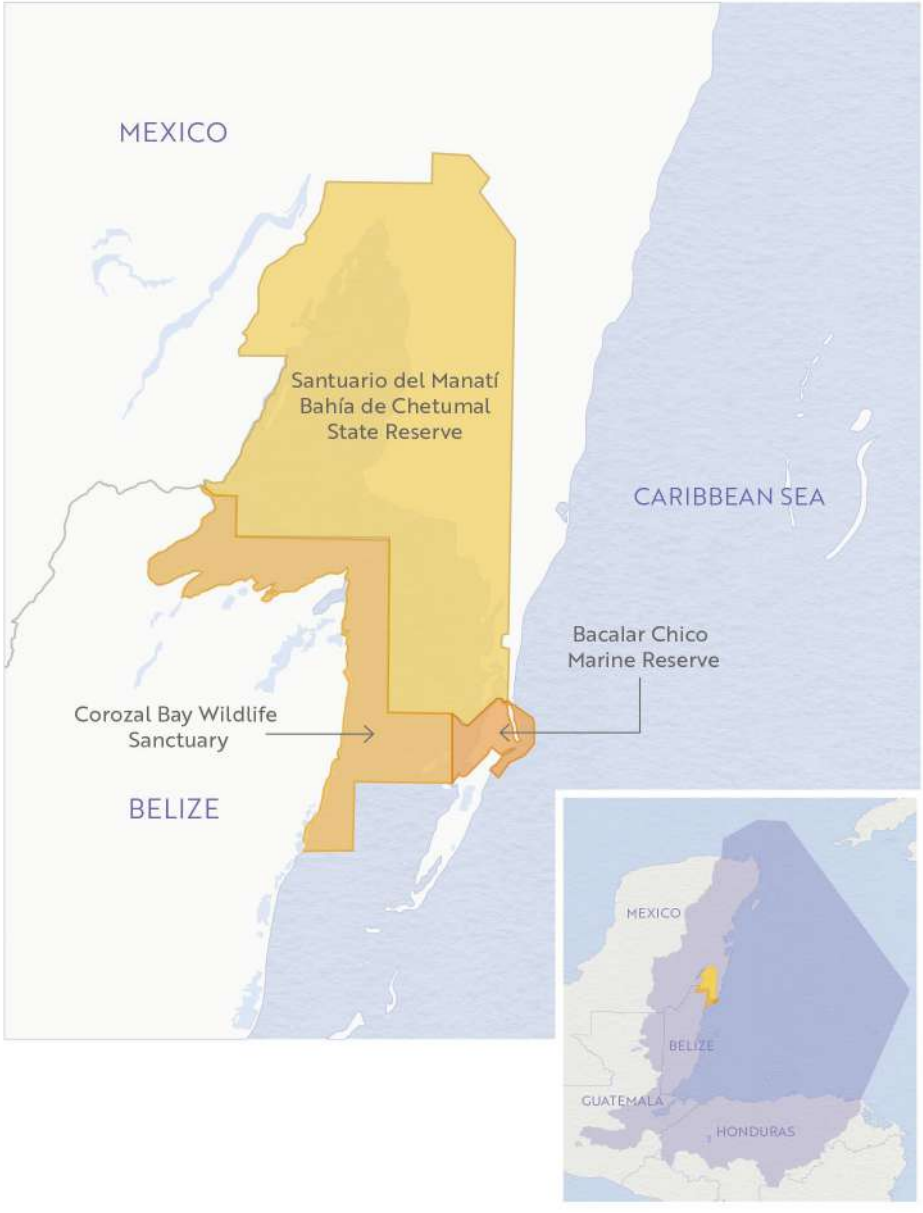
arrives, he is accompanied by Ángel Gómez López, an environmental technician with 27 years at the institution, and Daniel Góngora, a newly hired biologist. Mateo has tanned skin and is wearing a dry-fit T-shirt with a curious print: a manatee. He speaks with a Yucatecan accent and explains that we're here for the monthly patrol along the Mexico-Belize border: an invisible line that crosses the waters of the bay and extends all the way to the Río Hondo.

"What you see over there," he tells me, pointing to a mangrove forest, "that's already the Río Hondo, in Belize."

We're waiting for the arrival of our Belizean partners from the Sarteneja Alliance for Conservation and Development (SACD). It's starting to pour, so much so that it's unclear whether SACD will show up or if we'll have to cancel. I'm nervous because I traveled a long way to be here. And if this tour isn't confirmed, what will I write about? Mateo interrupts my pessimistic thoughts with a bit of history: he explains that the cross-border patrols began in 2017 and that their main purpose was to deter illegal fishers, primarily crab fishermen. On the visit, in addition to IBANQROO officials, there are members of the Navy—whose jet-black submachine guns would intimidate anyone—as well as a representative from the National Commission for Aquaculture and Fisheries (CONAPESCA), who has the authority to penalize anyone who commits a violation in these waters. These patrols are necessary because, a few years ago, illegal fishing was still rampant. Although Mexican law allows crab fishermen to fish with personal traps, some set up vast networks of nets, even encroaching on Belizean waters. On one of the first cross-border patrols, Mateo recalls, 140 traps of dubious legality were removed.

Beyond modest fishing, Chetumal Bay has historically been difficult to exploit economically: it lacks the depth needed for a commercial port, the crystal-clear waters that tourists cherish, and the white-sand beaches found along the Riviera Maya. Chetumal looks on with a certain degree of envy at the success of other, younger cities in Quintana Roo (Cancún, Playa del Carmen, Tulum) which boast hotels, crowds, nightclubs, and restaurants.

MAP OF MARINE AND COASTAL PROTECTED AREAS (MCPAS) SUPPORTED THROUGH COLLABORATION BETWEEN MEXICO AND BELIZE



Chetumal is something else entirely: a sweltering city of 400,000 people, filled with low-rise buildings, where the average resident's fate is to become a government employee: the government of Quintana Roo has its capital here, and a large portion of the population works for the state. Although Chetumal appeared on old maps before Cancún or Playa del Carmen, and its bay was already known to pirates in the 18th century, its economic development has lagged behind that of other parts of Quintana Roo. This is reflected in the city's skyline: the tallest building in the city is a six-story hotel.

From the city's boardwalk, Chetumal Bay isn't particularly scenic: its waters are clouded by sewage and also by sediment from the Río Hondo, which during the rainy season—as it is now—turns the tide black. I think: Chetumal is a frontier where the archetypal landscape is not a beach, where the attractions aren't necessarily natural ones, but rather those found in other border towns, where recreation is associated with going shopping (in this case, to the commercial Free Zone of Belize, where beer is cheap and the solar panels are imported from China).

But Chetumal Bay is home to a treasure unknown to much of Mexico: the country's largest concentration of manatees. This population has been known since ancient times. The Maya described the manatee with the word *baklam* ("large sea fish"), and European scientists classified them in the Sirenian order in honor of the mythological mermaids who confused ancient sailors.[27] Manatees once thrived along the entire Mexican Atlantic coast, from the border with Texas to the border with Belize. But today their habitat has shrunk: their main population is found along the coast of Quintana Roo and, above all, in the marine sanctuary of Chetumal Bay.

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27 F. Flores, "Pescado grande de mar: historia del manatí antillano en el área maya peninsular y el Caribe, siglos XV al XIX," in María Valencia and Carolina Depetris (eds.), *Arte, ciencia y palabra: escritos sobre viajes y viajeros. Mexico City: Universidad Nacional Autónoma de México*, 111.

Since it was designated as a protected area, the Santuario del Manatí Bahía de Chetumal (Chetumal Bay Manatee Sanctuary) has included not only the Mexican waters of the bay that gives it its name but also bodies of water such as Guerrero Lagoon and a large terrestrial area. Mateo explains to me that this is because, to protect the manatee, it is not enough to protect just the bay or the lagoon: we must also protect the rivers through which the animals travel, the mangroves that safeguard marine integrity, the bay's waters, the seagrass beds, as well as a certain land area that helps maintain ecosystem integrity and serves as a corridor for species such as the jaguar, the tapir, and the red deer. In Quintana Roo, there are 11 state and municipal protected natural areas, covering nearly 313,000 hectares, of which 88.8% are within the Manatee Sanctuary.[28]

The Manatee Sanctuary has another special feature: it is a state-managed area surrounded by federal areas, including the Arrecifes de Xcalak National Park, the Uaymil Flora and Fauna Protection Area, and the Sian Ka'an Biosphere Reserve. Despite its designation in 1996, for nearly two decades the Sanctuary was little more than a paper park. There was no budget for monitoring or research. Throughout its history, IBANQROO has had very modest budgets. The sanctuary's 277,800 hectares were legally protected, but in practice, little was done to monitor them. In the mid-2010s, poaching—particularly of blue crab—was a difficult problem to address.

However, this began to change in 2014, thanks to Phase II of the "Conservation of Marine Resources in Central America" project. During that phase, MAR Fund received 5 million euros from German Development Cooperation through KfW, which were distributed among all approved projects, including this one. This made it possible to reduce the "neglect" of the bay, establish surveillance, and strengthen community participation in the area.

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28 Comisión Intersecretarial de Bioseguridad de los Organismos Genéticamente Modificados (CIBIOGEM). *Áreas naturales protegidas del estado de Quintana Roo.* n.d. Available at: https://cibiogem.secihti.mx/anpl/quintana-roo/.

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At 9:16, the downpour has stopped. The sky clears, and the rain begins to evaporate. In the distance, we hear the hum of an engine: it's the SACD's Manatus boat, with six Belizean colleagues on board. To my relief, Mateo confirms that the cross-border trip will indeed take place. The Belizean boat is captained by Miguel Heredia, who explains that his goal, in addition to the border inspection, is to monitor water quality on the Belizean side, and he points out a water sampling kit to me.

We set off toward the border. The morning is calm; the rain has stopped. There are no suspicious vessels on the horizon, nor any nets visible in the water. Unlike other bodies of water at the foot of a major city, Chetumal Bay is not known for its hustle and bustle, and the only boat visible this morning, aside from ours, is the water taxi that runs between the capital of Quintana Roo and the tourist paradise of San Pedro, Belize. Mateo explains to me that the purpose of our trip is a deterrent: to let illegal fishermen on both sides of the border know that the authorities are keeping an eye on the bay.

The SACD and IBANQROO boats move side by side, like a pair of dolphins, until they reach the Río Hondo. The Mexico-Belize border here consists of little more than two rows of mangroves crossed by this pitch-black river. There, the crews turn off their engines, greet one another, joke around, and promise to see each other again soon somewhere to drink a toast with some Belizean beer. In front of the obsidian-colored water reflecting the elevated mangroves and the grey sky, the teams pose for a photograph. Then they say goodbye and each group returns to their country.

A few minutes later, we set course for Isla Tamalcab, in the northern part of the bay. A Navy boat catches up with us, carrying five crew members, including two armed with submachine guns. According to research, the island was once an important trading hub for the Mayans; in the southern part of the island, archaeological remains provide evidence that this remote island of mangroves and calm waters was a commercial center.

THROUGH A GAP IN THE CLOUDS, THE SUN CASTS ITS FIERY LIGHT. UNDERWATER, THE MANATEES ELUDE US, THOUGH WE KNOW THEY'RE THERE.

From a conservation standpoint, combating practices such as illegal fishing must be accompanied by economic opportunities. One of the major challenges for IBANQROO has been to offer fishermen in this area alternatives that help them recoup the income lost due to fishing restrictions, which have become stricter over the past decade. In addition to supporting a more effective system of issuing permits to vessels to promote legal fishing, one of the most obvious solutions is, of course, tourism: Chetumal is just a stone's throw away not only from major beach destinations but also from world-famous natural sites such as Bacalar Lagoon.

Promoting Chetumal's tourist attractions is part of IBANQROO's current work. And that's exactly why we're sailing toward Tamalcab. During the trip, we pass by the Calderitas ejido area, where we catch a glimpse of a growing number of structures—palm roof huts, houses, cabins, restaurants—most of them for recreational use. "The area is a headache because of illegal land subdivision," my fellow passengers tell me. The reason is clear: the waters in this part of the bay are cleaner and have a more attractive hue than those in the downtown area, making this spot the best option near the city for a dip in the sea.

After a brief stop on the island, where we admire the mangroves, feel the fine sand beneath our feet, and confirm that this is an excellent spot for a day trip on a day off, we set sail back to Chetumal. The silvery waters refract the pale light; the sky struggles to clear; the fleeting back of a dolphin glistens like a mirage. The bay sparkles just as it surely did in the days of pirates. Through a gap in the clouds, the sun casts its fiery light. Underwater, the manatees elude us, though we know they're there.



Manatee (*Trichechus manatus*).
Photo: Valentina Cucchiara.



Dry Land

On its mainland portion, the Santuario del Manatí Bahía de Chetumal includes three lagoons, as well as a land area divided among four ejidos (collectively-owned land). To the north, this sanctuary is so extensive that it borders Uaymil, which in turn borders Sian Ka'an—both of which are federally protected natural areas. One of the sanctuary's bodies of water, Guerrero Lagoon, is the site of one of the best-known conservation stories in southeastern Mexico: the story of Daniel the manatee.

Daniel was just under two years old when a couple of teenagers found him in the warm waters of this lagoon, 15 kilometers north of Chetumal. The teenagers were fishing when they noticed something strange—a sort of floating buoy; they swam closer and saw that it was a young manatee. They alerted the adults, who in turn called the authorities.

The biologists who rescued Daniel soon understood the reason for his abandonment: unlike the average manatee, which uses its pectoral fins to stabilize itself and swim in a straight line, Daniel swam in a spiral—an unusual habit that may have contributed to his abandonment. Like a rebellious child disinherited by his parents, Daniel's eccentricities may have cost him his place in the herd.

In those years, no facility in Mexico had protocols in place for responding to manatee strandings. There were manatees in captivity at water parks and zoos, but there were no proven protocols for caring for wild individuals and rehabilitating them with the goal of eventually releasing them. In other words: no one knew exactly how to rehabilitate a manatee, nor were there adequate facilities to do so.

The prognosis for Daniel was not good: manatees are susceptible to stress, which makes them sick and kills them. A manatee, despite its placid image as a floating mammal, has needs—including the need for companionship—that, if unmet, can cause a rapid deterioration in its health. When young manatees feel threatened or lose their mother, their reaction is to go on a sort of hunger strike that ultimately kills them. The manatee is an animal that prefers death to loneliness.

"Daniel was a process of trial and error," Ángel from the IBANQROO team tells me. He still remembers the manatee's first days in captivity, when he was being fed with two bottles (when they sense the absence of a food source, manatee calves close their mouths and refuse to eat, so it's necessary to introduce two bottles simultaneously and alternate between them as they empty). Daniel, barely two years old, had a strong need for physical contact and required the company of another being at all times.

At first, he was fed lettuce, which he devoured in big bites. But in the long run, this proved to be a mistake, since salad is not the natural food of a manatee in the wild: he had to be accustomed to eating seagrass. When the caretakers changed his diet, the chosen format—small "rolls" of sea grass—turned out to be the wrong choice: once he had become accustomed to the rolls, it was difficult to convince him to eat strands of sea grass. It took years of conditioning to wean him off this habit.

Daniel's stay at Guerrero Lagoon lasted longer than expected, and what began as a makeshift pen at the water's edge evolved into a community field station where the biologists in charge of his rehabilitation established a center dedicated to science and environmental education: the Community Field Station of the Santuario del Manatí Bahía de Chetumal State Reserve.

Today, against all odds, Daniel has left what was his home for more than a decade. Lured by the possibility of mating, one day he left his refuge in Guerrero Lagoon and now roams the lagoons, rivers, and Chetumal Bay. The empty enclosure we visited today—and about which some tourists complain online—stands as a testament to something more important: the freedom of the manatee that used to swim in spirals.

During the time he lived in Guerrero Lagoon, Daniel's presence served not only as a tourist and scientific attraction but also as a meeting point and a unifying force for the creation of community-based environmental projects. Thanks to the support of MAR Fund and through IBANQROO, two key programs have taken root in these ejidos, under the manatee's protective fin.

It's Tuesday afternoon when I meet at the Community Field Station in Guerrero Lagoon with two groups: the Yaalcab-Há Cooperative and BioFaunTásticas. The first to introduce themselves are Francisco Juárez and Benigno Barrientos from Yaalcab-Há, also known as the "community guardians." Francisco tells me that this group was formed in the Ejido Úrsulo Galván, a remote area that has suffered in recent years from poaching, illegal orchid harvesting, and illegal logging. In 2017, fed up with the situation, several men from the community decided to organize a group of guards. This initial effort was carried out without any compensation (and there was no budget for the equipment needed to do the work). However, an initial contact with IBANQROO changed their fortunes. Through this organization, the guards—who had not yet formed their cooperative—managed to establish initial contact with MAR Fund, which supported them with KfW funds to build a guardhouse, as well as to purchase boots and machetes. In 2018, the members of Yaalcab-Há took a course on how to form a cooperative, which they eventually established with five members. This was a major achievement for the group.

"I used to be a bricklayer and a master carpenter; without the workshops, it wouldn't have been possible to start the cooperative," Francisco, one of the founders, tells me.

Since its establishment as a cooperative, Yaalcab-Há has received support to diversify its operations. With funding from CONANP's PROCODES program, the cooperative continued to support the project "Wildlife Monitoring in the Santuario del Manatí Bahía de Chetumal State Reserve–Arrecifes de Xcalak National Park Biological Corridor." Camera traps were key to demonstrating that the remote corners of the ejido are frequented by endangered species, including the jaguar. Today, the cooperative continues to offer tourism

services, although rising insecurity has unfortunately forced them to remove the camera traps.

The second group is made up of the BioFaunTásticas, a collective whose origins date back to a handicraft-making course held in 2021. After the course, several of the participants joined forces to make felt manatees as part of a community effort that combined environmental education with handicrafts.

Today, the group consists of four women. Two of them, María del Carmen Guarda Morales, president, and María Tila Martínez, treasurer, are meeting with me this afternoon to discuss the group's activities. Although they began as a commercial project, it's important to note that the BioFaunTásticas also carry out environmental education activities. For example, they have taught students at the local elementary school how to make felt tapirs and learn about the biodiversity in their community. Using images captured by camera traps, they have diversified their range of crafts: today they design and produce items shaped like more than 60 species, including the tapir, the flamingo, the cardinal, the sea turtle, and even staghorn coral.

With support from MAR Fund, the BioFaunTásticas have been able to purchase computer equipment, a printer, office chairs, and stationery, as well as receive training on how to develop a business plan. Thanks to what they've learned, the BioFaunTásticas' crafts are now sold in stores in Chetumal and Bacalar, as well as at forums, universities, bazaars, and scientific conferences. And for every item sold, two pesos are donated to conservation efforts.

The handicrafts have served to empower a social group that is often marginalized: women. For María Tila, for example, her new job has allowed her to give up the small grocery store she used to run—which she admits was not very profitable—and to dedicate herself full-time to this start-up, giving her a healthier balance between her work and her family obligations.

I didn't manage to see any manatees during my boat trips. But I was able to take another one home as a good-luck charm. And although it was a felt manatee, it carried the essence of this conservation effort: a project made

BECAUSE WHEN THE COMMUNITY RESCUED DANIEL, IT DIDN'T JUST SAVE A THREATENED SPECIES: IT MADE POSSIBLE A CONSERVATION STORY IN WHICH IT BECAME THE PROTAGONIST.

possible by the mysterious convergence of an animal, the biologists who cared for it, the community that sheltered it, donors from places as far away as Germany, France, and the United States, and the organization that was able to channel those efforts: MAR Fund. A manatee needs rivers, bays, and lagoons. And conservation needs a collective effort of people and goodwill, connected in this case by the desire to give a manatee a second chance at life.

Because when the community rescued Daniel, it didn't just save a threatened species: it made possible a conservation story in which it became the protagonist.



Nurse shark (*Ginglymostoma cirratum*).
Photo: Diveana Samos / Sarteneja Alliance for Conservation and Development



Corozal Bay

Joel Verde, director of the Sarteneja Alliance for Conservation and Development, had an unconventional start in the world of conservation. A native of the remote village of Sarteneja in northern Belize, his fate seemed sealed from the moment he was born: he would be a fisherman, like his grandfather, like his father, like all the men of Sarteneja. Joel was born in 1983, a couple of years after Belize gained independence. In other words, he is almost the same age as his country.

When Joel was nine years old, an event changed his life. His older brother, who was only 16, lost his life in a fishing accident on the high seas. The tragedy shook his family and led Joel's father to forbid him from following in his brother's footsteps.

"You're going to study, go to college—whatever you want. But you're not going to be a fisherman."

Little Joel was confused: in Sarteneja, all the men were fishermen. Being a man meant being a fisherman, and vice versa. A man was someone who fished, sold his catch, and then squandered the money. And the next day, he'd do it all over again.

But Joel obeyed his father's wishes, and when he was old enough, he enrolled in a bachelor's degree program in natural resource management. He then became a certified tour guide and began a life where he didn't fish, but instead took tourists to see fish, the ocean, and coral; to dive with nurse sharks; and to take photos. While his ancestors caught fish with hooks and nets, he did so with the shutter of a camera.

At age 25, Joel returned to Sarteneja and began working as a project coordinator for something unlikely: an organization dedicated to conservation. There's a Latin saying: *nomen omen* (the name is destiny). Joel Verde didn't know it, but he would soon live up to his last name.

At that time, the Sarteneja Alliance for Conservation and Development was a tiny organization with just three employees, but it had already been selected as a partner organization by the Belizean government for the conservation of Corozal Bay Wildlife Sanctuary (CBWS). Let's recall: Belize, like its MAR neighbors Honduras and Guatemala, has a conservation model in which protected natural areas can be managed by private organizations, generally philanthropic ones, that raise funds, conduct patrols, and, in some cases, collect entrance fees.

Those early years were difficult: the designation of the CBWS as a protected area in 1998 meant that fishing was completely banned there. And SACD, the organization responsible for patrolling Corozal Bay, frequently encountered smugglers, illegal fishermen, and foreign vessels entering Belizean waters with questionable intentions.

Some of the illegal fishermen were residents of Sarteneja, and it was SACD's responsibility to report them to the authorities. But arresting and fining fishermen, many of whom are your neighbors, is a quick and effective way to make enemies. And Corozal Bay, despite its 72,000 hectares, is a small place where everyone knows each other.

Joel recalls that for many years, Belizean waters were a place where the law had become virtually ineffective and where fishing took place without following any rules whatsoever. Practices such as chlorine fishing were carried out, which involves pouring chemicals into an underwater cave until the fish emerge in desperation from their hiding places and become easy prey for the fisherman. Gill nets were also widespread; these nets catch everything, including turtles and crocodiles. Fishing in the protected area was largely carried out by outsiders—many of them foreigners—who sought to harvest species such as lobster and king crab for sale. In the 1990s, there were still manatee hunters who sold the meat by the kilo.

THROUGH EDUCATION, AWARENESS CAMPAIGNS, AND COMMUNITY OUTREACH, THESE HARMFUL PRACTICES HAVE GRADUALLY DISAPPEARED FROM COROZAL BAY

It wasn't easy, but through education, awareness campaigns, and community outreach, these harmful practices have gradually disappeared from Corozal Bay. Since patrols began in 2015 with support from MAR Fund, the CBWS has established itself not only as a key reserve for the trans-boundary manatee population but also for larval fish and juveniles of marine species such as the bull shark and dolphins. Corozal Bay is connected to the MAR, and some suggest that these waters—lacking large predators—serve as spawning grounds for many species that, once they reach a larger size, decide to try their luck on the reef.

In the years he has been part of SACD, Joel has climbed up the ladder: he went from being a volunteer to the organization's director. Today, SACD has an advisory board, 19 team members, and above all, a professionalized staff structure that has taken years of work and institutional strengthening.

But there is one thing it still does not have: financial independence. And this is exactly what SACD is trying to change with a new program.



River to Reef

It's 5:30 in the morning on the northern coast of Belize, and the sun is already streaming brightly through my bedroom window. The world is waking up; sleep is impossible. From my bed, I can see the waters of Corozal Bay: milky, brackish, and murky. I can hear the songs of different birds: one goes "baby baby," another makes a cackling sound like a jackhammer. I step out of the room just in time to see two blue parrots pecking at fruit on a tree.

It's Monday morning, and soon I'll be meeting up with the SACD team, including Joel, who agreed to pick me up—by boat, no less—at 6:30 a.m. My journey here has been a long one: after flying from Mexico City to Chetumal and crossing the Belizean border by land, we drove an hour and a half to the town of Sarteneja. Until a couple of years ago, the trip would have been even longer: the highway—one lane in each direction—that now connects Sarteneja with Corozal didn't exist. The road is so new, in fact, that you can see freshly cut trees and freshly quarried limestone along the side of the road.

Sarteneja, with a population of about three thousand, is a village where everyone knows each other, if they aren't actually related: several people told me that the town was founded by mestizos who were reluctant to fight and were fleeing the Yucatecan Caste War in the 19th century. These people found in this remote coastal area a place to escape forced conscription and live in peace.

Sarteneja has sandy streets and courtyards where mangoes, avocados, and sapodillas grow. It has a small coastal avenue where trees bloom at the water's edge; where the small beaches of white silt serve as parking spots for small boats. It is a place of immediate beauty, although, due to its isolation, it does not usually appear on tourist itineraries. Recently, thanks to the new highway and promotional campaigns, this has changed: today, it's possible to see a few Canadians, Americans, and Europeans strolling along its boardwalk. Some have even built houses on the western edge of town,

an area the locals call "Gringo Alley." Others, more ambitious, are building rustic beach hotels like the one where I'm staying, which welcomes visitors with a Canadian flag.

Today, however, SACD won't be taking me to explore Sarteneja or the jungle surrounding it, but rather its waters: we'll sail to a river, then visit a project on the coast, cross the bay, and look for the channel that leads us to the Caribbean. It will be a long day, and the purpose of the excursion is to experience what SACD has dubbed the "River to Reef Experience." This program was launched in 2022 in response to the need to develop a project that combines science and education, and it is part of efforts to diversify the revenue streams of SACD, an organization that began with a conservation mission but now seeks to reduce its dependence on traditional donations.

Leomir Santoya and Joel Verde will be leading the tour. I hear them before I see them: the sound of their boat's engine echoes through the silence of the bay. Joel: almond-shaped eyes, a shadowed mustache, a dry-fit shirt. Captain Leomir, for his part, wears a sun-protective bandana, a white cap, and sunglasses. He steers the boat with seriousness and confidence.

We set out for Río Nuevo, about 10 kilometers west of Sarteneja. We pass by Mayan ruins overgrown with vegetation, undoubtedly taller and more imposing than any contemporary building in the area. Upon reaching the isolated and dark tributary, Joel explains to me that for years, the Río Nuevo served as the waterway that carried sugar from the city of Orange Walk to the ports of Belize; in other words, it was a heavily trafficked and disturbed river. The construction of a highway nearly a decade ago allowed for the transport of goods by land, which contributed to the ecological recovery of the tributary. Today, this river, which was in poor condition eight years ago, is once again home to crocodiles and even manatees (Leomir spots one briefly poking its back out of the water). Joel believes that starting this tour on the river is crucial: the point is to understand that all these aquatic ecosystems, from the jungle rivers to the sea and the reef, passing through the bay, are interconnected. It's also important to clarify that only the aquatic area is protected; the CBWS does not include terrestrial areas.

We steered the boat east until we reached the SACD camp, where we stopped to tour the conference center and the ecological garden. Built with support from the Belize Marine Fund (part of the MAR Fund), which provided funds for its construction, this facility is intended to serve as a space for scientific and educational activities. There, Joel explains to me that, currently, SACD relies on its donors for ninety percent of the funding for its conservation work, so finding alternative sources of income has been a priority for several years. While traditional tourism is still scarce in Sarteneja, Joel sees visitors with scientific interests—students and researchers—as potential allies in this mission. And the truth is that these efforts have already begun to pay off, as SACD has organized the "River to Reef" program for university groups from the United States; through this program, young aspiring biologists have been able to explore a tropical coastal ecosystem while contributing to its conservation.

As we sail across Corozal Bay toward the next stop on the tour, I take in the vivid colors of the landscape: the snow-white sand, the emerald jungle, the intense blue of the sky, and the black clouds foreshadowing a storm. I wonder if 50 years ago the Riviera Maya looked like these coasts do today. Will these coasts be home to a tourist and hotel hub like Cancún in 50 years? Some speculate that, since they are protected from sargassum, these beaches could become more visited in a few years than those of Caribbean islands. But Corozal Bay has a disadvantage when it comes to tourism: its waters are too shallow; the depth sometimes doesn't even reach a meter and a half. In its deepest areas, it's only five and a half meters. This means these waters are not able to host a yacht, let alone a cruise ship. Boats and canoes are the only vessels that can comfortably navigate these bays. If a larger boat were to try, it would get stuck in the mud like a pick-up in the sand.



Queen angelfish (*Holacanthus ciliaris*).
Photo: Ramiro de Jesús Arcos Aguilar



The Fishermen and the Reef

One of the major challenges the CBWS has faced has been striking a balance between the traditional practices of a town as deeply rooted in fishing as Sarteneja and conservation. Although most traditional fishing in Sarteneja takes place not in Corozal Bay but on the reef, there have always been fishermen—and fisherwomen—who caught fish, conch, and lobster in the bay. They were the ones who suffered the most from the protection order, as it prevented them from continuing their catches. That ban initially strained the relationship between traditional fishermen, the government, and SACD, the organization responsible for enforcement.

As we sail toward the reef for the final leg of the River to Reef expedition, Joel tells me that one of SACD's successes has been securing exemptions from that ban: they lobbied the national government to grant permits for traditional fishing methods to those families in Sarteneja who could prove they had once used artisanal traps. As a result, there are now 16 families in CBWS with permits to operate traps designed according to the same principles as those used in Mayan times. You can see them along the coast: a series of stakes covered with netting that extend into the sea and end in two circles forming a sort of heart-shaped enclosure. Six times a week, the fishermen go to the trap and deploy a net to catch the fish. Each family keeps a logbook of their catch and certain species (such as the angel fish or the occasional crocodile) must be freed. The snappers and barracudas, on the other hand, go straight into the fishing family's ice box. Thanks to initiatives of this kind, SACD today has a better relationship with the community and can carry out its work with more ease.

It is also true, however, that challenges do not disappear; they simply take on new forms. And today, Corozal Bay faces different problems than it did 15 years ago. Illegal fishing has been largely eliminated in the bay, but

other risks remain. The main one concerns water quality, which, while not yet polluted enough to cause serious health hazards, is already becoming a cause for concern, especially in the vicinity of the city of Corozal. Other problems stem from further afield: climate change, in particular, threatens to cause further severe environmental imbalances.

The afternoon is drawing to a close, but we're already heading toward one last stop at the northern tip of Ambergris Caye: Bacalar Chico. As we sail eastward in this splendid bay, where there are more dolphins than people, it's hard not to think about what came before us. Several centuries ago, when there was no country called Mexico and no country called Belize, this entire region belonged to what we now call the "Mayan world." The Mayan world, of course, did not consider itself "Mayan," but simply "the world." Nor did the various peoples within it recognize one another as Mayan, but merely as people from other regions, speakers of other dialects; they traded among themselves, but they also fought and competed.

According to local legends, about two thousand years ago a Mayan ruler realized that he could avoid long sea voyages by building a canal through the middle of the Xcalak Peninsula: and that is how the Maya Canal came to be, the body of water that separates Belize from Mexico and connects Chetumal Bay to the Caribbean, also known as the Bacalar Chico Canal, since Spanish ships bound for Bacalar Fort used this route to shorten their journey.

The border between Xcalak and Ambergris is one of those places I've seen on maps and in books but never imagined I'd see in person. So when Leomir tells me we'll be heading toward the reef through those mysterious waterways, I can't hide my excitement. I'm in one of those places—like the Guianas or the Bermuda Triangle—whose existence I knew about but never really believed I'd visit one day.

And yet today, Monday, July 21st, instead of being at the office, I'm here. These waters aren't just a geographical curiosity or the most remote border between Mexico and Belize, but something more important: a connecting channel between Chetumal Bay and the Mesoamerican Reef. A passage through

which not only fishermen head out to the open sea, but also fish larvae, snappers seeking their fortune in deeper waters, and manatees eager to swim in the warm Caribbean waters.

The Bacalar Chico Canal welcomes us with a swirling mass of hundreds of seagulls floating in the sky like a constellation of kites. Our boat makes its way through the winding, mangrove-lined canals, navigating the waters that divide two countries. The border here has no markers: no buoys, no guards, no checkpoints; there are a few navy outposts, but if they're scrutinizing us through binoculars, I don't notice. The Caribbean announces its arrival with an ominous sign: islets and strands of sargassum drifting toward us. For more than a decade, sargassum has been a curse in the Caribbean: we all know the damage it does to the landscape, but fewer people realize that the sargassum patches clog the Bacalar Chico channel like cholesterol plaques in an artery, robbing oxygen from the fish trying to navigate between the bay and the sea. Suddenly, I understand: the seagulls flying overhead are here to feast on the floating carcasses of suffocated fish. Yesterday, a farmer in Brazil overused fertilizers, and today a fish dies in Belize.

We continue on our way through the winding curves of water, and suddenly, the mangroves disappear, and the water changes color. The scarlet sargassum is left behind, and we arrive at a different place; one where the waters are crystal clear and unmistakably turquoise: the Caribbean Sea. We drop anchor and dive into the water with masks and snorkels. Soon the creatures appear: fluttering eagle rays, nurse sharks the size of mastiffs, iridescent parrot fish. Corals the shape of brains and fans. Barracudas chasing schools of fish. I feel like I'm moving through the rooms of a huge mansion, one that has been crumbling for a while but still retains its old splendor that demands contemplation and silence. The corals sway like trees pushed by the sea current. They resist because that is what everything alive does: resist. It's because of us that this reef system is threatened. But without us, it would be condemned to disappear.



Hunting Caye, Sapodilla Cayes Marine Reserve, Belize.
Photo: Edwin Cabrera

SUPPORT PROVIDED BY MAR FUND TO SACD (2015–2024)

Over the past decade, SACD has received multiple forms of support from MAR Fund that have strengthened its institutional growth, professionalization, and the sustainability of its mission.

KEY AREAS SUPPORTED:

Years	Source/program	Focus area
2015	**Phase I of the KfW project**	Consolidation of marine protected areas and promotion of the sustainable use of biodiversity
2015-2019	**Special Projects**	Expansion of Managed Access within the Corozal Bay Wildlife Sanctuary
2017-2020	**Re-granting in the Mesoamerican Reef**	Strengthening of SACD's institutional and management capacities to support long-term sustainability
2020	**Special Projects**	General Support Program for strengthening management efforts in Corozal Bay
2020-2022	**Special Projects**	General support for emergency assistance in Belize's Marine Protected Areas
2022	**Belize Marine Fund**	Strengthening financial sustainability through investments in the tour operator (CBEA) and support for alternative livelihoods for local communities
2022–2024	**Special Projects**	General Support Program to improve the health and resilience of the Mesoamerican Reef
2023	**Phase III of the KfW project**	Strengthening of the Corozal Bay Wildlife Sanctuary (CBWS) and the Santuario del Manatí Bahía de Chetumal State Reserve, Mexico (RESMBCH)
2023	**Belize Marine Fund**	Construction of the Tourism Expedition Hosting Facility in Sarteneja
2023	**Small Grants Project**	Project to strengthen SACD's financial sustainability through the promotion of "River to Reef" green academic expeditions
2023	**MAR+Invest–Acceleration Program**	Consolidation of business model to generate revenue and strengthen the organization's environmental and community management efforts



American crocodile (*Crocodylus acutus*).
Photo: Braulio López.

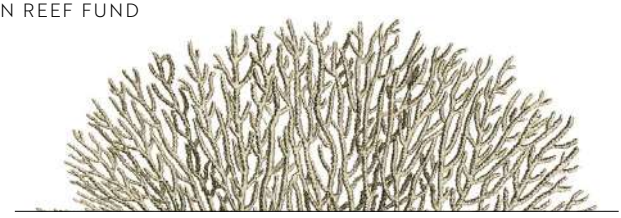
AREAS SUPPORTED:

Institutional Strengthening and Financial Sustainability: Organizational and legal consolidation; improvement of administrative and financial systems; strategic planning and resource mobilization; development of the revenue-generation model.

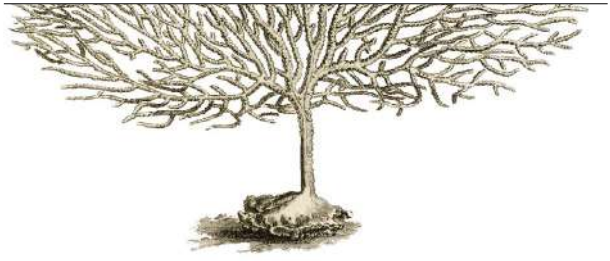
Operational Management and Conservation: Operational costs and infrastructure; technical and technological equipment; enforcement and surveillance; ecosystem research, monitoring, and protection; sustainable use plans and cross-border coordination.

Community Development and Capacity Building: Technical and administrative training; revenue-generating projects and alternative livelihoods; environmental education, scholarships, and community participation.

Donors who contributed via MAR Fund include the Summit Foundation, the National Fish and Wildlife Foundation, KfW, Overbrook Foundation, Fondation de l'Orangerie, Paul M. Angell Family Foundation, FFEM, Oak Foundation, and Global Fund for Coral Reefs.



HISTORICAL FIGURES



55 PROTECTED **AREAS** SUPPORTED, including **28** **PRIORITY** protected areas



OPERATES IN THE **4** **countries of the MAR region,** with collaboration extending to other countries in the **Greater Caribbean and Latin America**

US$ **63.3 million** ADMINISTERED TO **FINANCE PROJECTS**

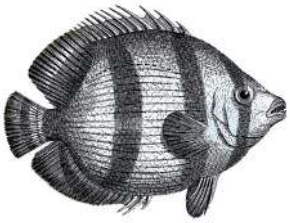
US$**37,615,421** **TOTAL ENDOWMENT FUND** AS OF DECEMBER 31, 2025



115 DONORS



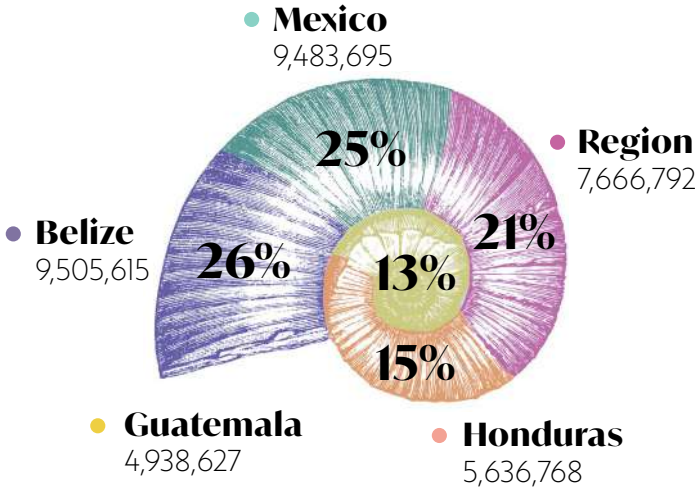
153 **PARTNERS** (REFERS TO ALL ORGANIZATIONS COLLABORATED WITH)



8,932,259.55 HECTARES
UNDER PROTECTION
ACROSS THE REGION

Funding disbursed by country and across the region

AS OF DECEMBER 31, 2025 / US$ PERCENTAGE



TOTAL = 37,231,497

MORE THAN
22,200
PEOPLE
TRAINED



6
INSTITUTIONAL
PROGRAMS

- Saving Our Protected Areas
- Fishing for the Future
- Climate Change
- Belize Marine Fund
- Clean Water for the Reef
- Blue and Regenerative Economy

6 ADVISORY COMMITTEES

GOVERNANCE ◆ COMMUNICATIONS ◆ AUDIT ◆ DEVELOPMENT ◆ INVESTMENT ◆ GRANTS & EVALUATION

10 PROTECTED **AREAS**
COVERED BY
parametric insurance

119,026
CORAL
FRAGMENTS
PLANTED





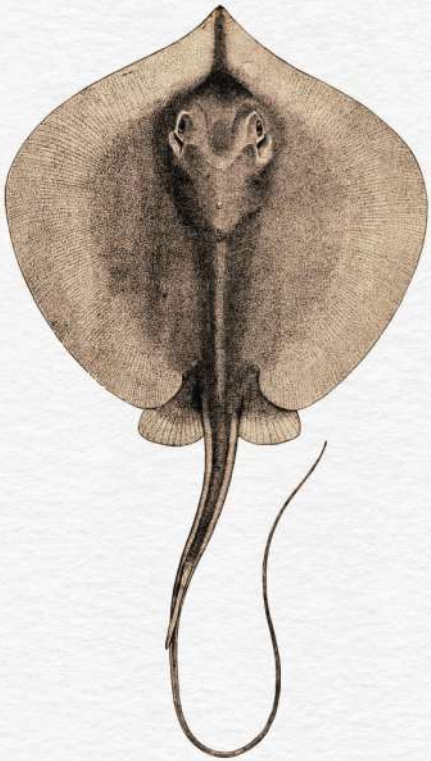
159 SMALL GRANTS **PROJECTS SUPPORTED**

(BREAKDOWN BELOW)

	Traditional Window	Reef Rescue Initiative	Belize Marine Fund
YEARS	**2006-2025**	**2017-2025**	**2017-2022**
# PROJECTS	**120**	**16**	**23**
GRANTS	US$ **3,886,830**	US$ **395,643.89**	US$ **673,362**
LEVERAGE	US$ **5,115,298**	US$ **456,469.89**	US$ **1,903,621**
# PROTECTED AREAS SUPPORTED	**18** priority **+ 9** additional in the MAR	**13**	**11**
HECTARES	**1,270,670**	**461,498.92**	**511,832**
PARTNERS	**44** NGOs, **5** government institutions, **4** academic institutions, **27** community organizations	**8** NGOs, **2** academic institutions	**14** NGOs and **1** academic institution



Cozumel raccoon (*Procyon pygmaeus*).
Photo: Lorenzo J. de Rosenzweig



CONCLUSION
The MAR, a Horizon with a Future

Twenty years of work on behalf of the Mesoamerican Reef may be a short time in geological terms, but it is a lifetime for an institution. Two decades ago, there were no smartphones or social media, and MAR Fund was just beginning to take its first strokes in the water: it organized workshops, defined its mission, sought partners, and received its first donations with a clear goal—to protect the MAR.

These pages have reviewed the institution's history, the context of its founding, its role as a coordinator of efforts, and the major milestones of its work across four countries. Now it's time to look forward and discuss what lies ahead.

The MAR, like the planet's tropical reefs in general, is going through one of the most challenging periods in its recent history. Despite the efforts of scientists, donors, experts, academics, community leaders, and citizens, the reef's health is deteriorating and demands immediate action.

Bleaching events have made reefs some of the most threatened ecosystems in the world. The problem is global: rising ocean temperatures stress and kill coral, while polluted waters and a lack of regulation of coastal discharges weaken the reef until it reaches the point of no return. When the reef loses

life, the world loses millions of years of evolution as well as the foundation that sustains the coastal communities that depend on it.

Giving up is not an option for the MAR. It is not an option for the residents of the Caribbean coast, nor for those who have committed to sustainable fishing, nor for the communities that have trained their children to be nature guides and pin their hopes for a dignified future on the reef. The collapse of the MAR would mean the loss of an incalculable biological heritage, shutting the door on any opportunity for prosperity for the generations living in the region.

There are also reasons for hope. Every time a group of women creates an environmental cooperative or an entrepreneurial association; every time an educator talks to children about the importance of conservation and their role as human beings in relation to nature; or every time a local resident decides to capture a protected species with a camera rather than a trap, the reef and its communities win. MAR Fund will continue to support these efforts, with a special focus on women, local communities, and Indigenous Peoples, as demonstrated by the recent addition of the visionary Indigenous leader Ramiro Batzín, an expert on nature, finance, and Indigenous communities, to its board of directors.

Science offers other tools that fuel hope. Coral restoration, environmental DNA analysis, and drone monitoring have proven to be valuable techniques and new avenues that require close monitoring. In this context, more studies will be needed to identify coral variants resistant to warming and actions to reduce pollution, as well as innovative proposals such as protected natural areas with mobile borders.

This is also a crucial time to strengthen strategic partnerships. Among these, partnerships with the private sector: development banks, commercial banks, cooperatives, and entrepreneurs. The business community cannot remain a passive beneficiary of a reef that others protect; its participation is essential through investments and new business models that enable the communities caring for the MAR to develop projects that are both environmentally and economically viable.

MAR FUND HAS ESTABLISHED ITSELF AS ONE OF THE MOST COMPREHENSIVE ENVIRONMENTAL FUNDS IN THE HEMISPHERE AND HAS DEMONSTRATED THAT SHARED LEADERSHIP, SYSTEMS THINKING, AND COLLABORATIVE EFFORTS CAN PROTECT THE REGION'S NATURAL HERITAGE.

The solutions the reef will need in the coming years will be neither simple nor inexpensive. In addition to investment in research, development, and better communication, it will be necessary to train new generations of biologists, technicians, and community guards, as well as to promote participatory processes that allow for agreement with the communities on the best courses of action. The countries of the MAR must redouble their efforts to bring education and technology to the coastal communities where the reef's future is at stake.

MAR Fund will continue to seek financial, technical, and scientific innovations that contribute to protecting this ecosystem, but it cannot do so alone. Collaboration with national and local governments and with regional institutions such as SICA's Central American Commission on Environment and Development is essential to ensuring the sustainability and scale of these solutions. It will be necessary, for example, to streamline the permitting process for restoration and to facilitate the work of organizations that act during emergencies, plan and invest in water treatment plants, and develop coherent regulatory policies for fishing in order to deal with overfishing, so as to allow the reef not only to survive, but to flourish.

The story of the MAR Fund reflects a gradual consolidation. What began as an idea became a proposal, then a small organization, and, over time, a key regional player that has supported protected natural areas, capacity building, leadership, research, and community projects. Drawing on the expertise of

its specialists, through collaboration and the building of partnerships with governments, and with the support of donors from various countries, MAR Fund has established itself as one of the most comprehensive environmental funds in the hemisphere and has demonstrated that shared leadership, systems thinking, and collaborative efforts can protect the region's natural heritage.

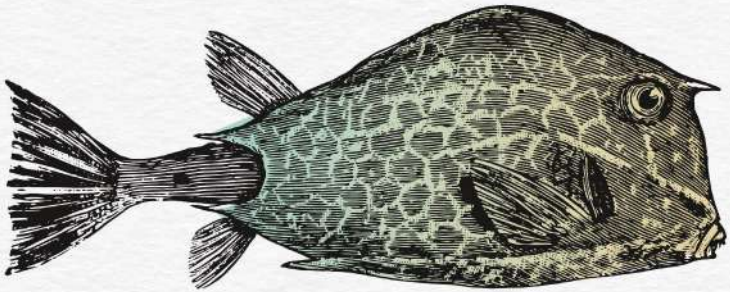
The reef is a network of living beings that depend on one another. At first glance, each organism appears to move on its own, but what happens at one point in the system affects the rest, and the fate of fish, crustaceans, mollusks, corals, algae, sponges, and other creatures is linked to the health of the whole.

Something similar happens with MAR Fund. The symbiotic relationships that sustain life on the reef reflect the close relationship between the Fund and its allies and partners. Thanks to this interconnected effort, achievements have been made where, twenty years ago, there was only a hope; it is worth moving forward, together, to care for this living system that still has a future.

It is everyone's responsibility to nurture this noble hope with wisdom, hard work, and resources.



Schoolmaster snapper (*Lutjanus apodus*).
Photo: Ana Giró



ACKNOWLEDGEMENTS

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Community organizations and partner organizations visited:

MEXICO

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(PARTNER, COOPERATIVA YAALCAB-HÁ)

Ángel Gómez López
(ENVIRONMENTAL TECHNICIAN, IBANQROO)

Daniel Góngora
(BIOLOGIST, IBANQROO)

María del Carmen Guarda Morales
(PRESIDENT, BIOFAUNTÁSTICAS)

Francisco Juárez
(PRESIDENT, COOPERATIVA YAALCAB-HÁ)

Mateo Sabido Itzá
(DIRECTOR OF NATURAL AREAS, IBANQROO)

María Tila Martínez
(TREASURER, BIOFAUNTÁSTICAS)

BELIZE

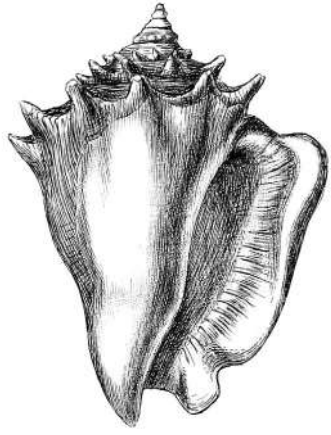
Miguel Heredia
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Leomir Santoya
(HEAD OF THE NATURAL RESOURCES PROGRAM, SACD)

Joel Verde
(DIRECTOR, SACD)

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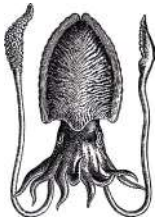




ANNEXES

I. MAR Fund Chronology / Timeline

2004



- MAR Fund incorporated in the United States as a nonprofit organization (February 11).
- First board of directors meeting (May 18).
- Lorenzo J. de Rosenzweig appointed as the first president of the board of directors (May 18).
- María José González F. hired as MAR Fund's first executive director; assumed office (September 1).
- Grant from the Summit Foundation to develop MAR Fund's administrative framework, fundraising capacity, and communications strategy.

2005



- Operations begin at the Guatemala office.
- Grant from the Summit Foundation to support MAR Fund's operational start-up.
- 2005–2008 Strategic Plan.
- Definition of the priorities that would guide MAR Fund's work.

2006



- Definition of MAR Fund's management focus and unique niche.
- Grant from The Ocean Foundation to support the establishment of priority coastal and marine protected areas.
- First request for proposals under the Small Grants Program.
- Joined the Latin American and Caribbean Network of Environmental Funds (RedLAC).

2007

- Launch of the Community Fisheries Program.
- First protected area prioritization exercise.

2008



- Participation in the celebration of the Second International Year of the Reef.
- Second request for proposals under the Small Grants Program.

2009

- 2009–2013 Strategic Plan.

2010

- Signing of the Conservation of Marine Resources in Central America Project (Phase I), funded through German Development Cooperation via the KfW Development Bank.

2011

- MAR Fund receives KfW's first endowment contribution of 10 million euros.

2012



- Public event announcing the establishment of the first endowment fund.
- Launch of the Conservation of Marine Resources in Central America Project (Phase I), with 5 million euros in funding.

2013



- Signing of the Separate Agreement for Phase II of the Conservation of Marine Resources in Central America Project, with a total investment of 5 million euros for five coastal and marine protected areas.
- First Connectivity Exercise in the Mesoamerican Reef.
- Signing of a financial agreement with the French Facility for Global Environment (FFEM) to add 1 million euros to the endowment fund.

2014



- MAR Fund receives KfW's second endowment contribution of 7 million euros.
- Signing of the Separate Agreement for the Reef Rescue Initiative.
- Development of the Regional Lionfish Control Strategy.
- Third Mesoamerican Reef Connectivity Exercise, with representatives from nine protected areas participating.

2015



- MAR Fund's 10th anniversary.
- Second prioritization exercise for coastal and marine protected areas and regional workshop. Update of the protected area prioritization methodology, identifying 14 additional priority areas, for a total of 28.

2016



- Completion of Phase I of the KfW project at four sites: Yum Balam Flora and Fauna Protection Area (Mexico), Port Honduras Marine Reserve (Belize), Punta de Manabique Wildlife Refuge (Guatemala) and Sandy Bay-West End Marine Special Protection Zone (Honduras).
- Signing of the Caribbean–Pacific Alliance for Marine Conservation Finance with the Caribbean Biodiversity Fund and PACIFICO.
- Launch of the Belize Marine Fund.

2017



- Launch of Small Grants Program calls focused on environmental justice and women's leadership, emphasizing community groups and climate change adaptation in Honduras and Guatemala.
- Renewal of the communications strategy and expansion of communications through social media and the MAR Fund website.

2018

- Development of the 2018–2020 Strategic Plan for the Mesoamerican Reef Restoration Network.

2019



- Launch of the MAR Fish Project for the regional spawning aggregation network.
- Signing of the agreement with FFEM to implement the MAR Fish Project.
- Regional meeting on Stony Coral Tissue Loss Disease.
- Completion of field activities under the Conservation of Marine Resources in Central America Project (Phase II).
- Initiation of the design of Phase III of the Protection of Maritime Resources in Central America Project.

2020



- MAR Fund's 15th anniversary.
- Launch of the Regional Strategy for Mangrove Conservation and Restoration in the Mesoamerican Reef.
- Creation of a parametric insurance program for coral reefs with WTW.
- Establishment of hurricane response coordinating committees in Mexico, Belize, and Honduras.
- Support for fisheries replenishment zones, including the designation of Cayman Crown as a no-take zone for 10 years under the MAR Fish Project.
- MAR Fund began serving as a sub-implementing agency for the Integrated Transboundary Ridge to Reef Management in the Mesoamerican Reef Ecoregion or "From Ridge to Reef" (MAR2R) project.
- Carlos Vijil elected as the second president of the board of directors (May 28).

2021



- Signing of the financial contribution agreement for the Protection of Maritime Resources in Central America Project (Phase III).
- Purchase and implementation of parametric insurance under the Reef Rescue Initiative.
- Development of the Environmental and Social Management System (ESMS).

2022



- Design of the Protection of Maritime Resources in Central America III Project (Phase III).
- Launch of MAR+Invest.
- Establishment of the Guatemala Caribbean Fund endowment account with US$3.5 million, financed through the future sale of carbon credits under FUNDAECO's REDD+ program.

2023



- Launch of the first KfW project Phase III call for proposals.
- Launch of Build & Connect and the MAR+Invest Acceleration Program.

2024



- Launch of the second KfW project Phase III call for proposals.
- Establishment of the MAR+Invest guarantee fund.
- Yvonne Ramírez elected as the third president of the board of directors (May 22).

2025



- MAR Fund's 20th anniversary.
- Fifteenth Mesoamerican Reef Connectivity Exercise.
- Award of the first concessional loans through MAR+Invest.
- Launch of the Women for the MAR initiative.

Photo Album

Photos: MAR Fund Archive



2003

Sylvia Marín and Carlos Morales, WWF.



2006

Board of directors meeting. Guatemala City, Guatemala.



2013

Gina De Ferrari, Marco Vinicio Cerezo, and Lorenzo J. de Rosenzweig, members of the MAR Fund board of directors.



2004

Garry Jewett, legal advisor WWF.



2013

MAR Fund team.

2014

A traditional dish prepared by a community of women entrepreneurs. Livingston, Guatemala.





2014

Letter of appreciation to the minister Lisel Alamilla.



2015

Launch of postage stamps commemorating MAR Fund's 10th anniversary.



2015

Ángela Mojica, María José González, Silja Ramírez and Ana Giró during MAR Fund's 10th anniversary celebration.



2015

MAR Fund's 10th anniversary celebration.



2016

MAR Leadership participants during COP13. Cancún, Mexico.



2017

MAR Fund Operations Team.

2017

Selina Villegas and Marco Vinicio Cerezo during a board meeting. Antigua, Guatemala.





2017

Invitation to lunch for the announcement of the Belize Marine Fund.



2017

Board of directors meeting. México City, Mexico.



2017

Board of directors meeting. Antigua, Guatemala.



2017

Juan E. Bezaury-Creel next to the MAR Fund logo. Antigua, Guatemala.



2018

Martin Goebel and Paquita Bath at a strategic planning workshop. Antigua, Guatemala.

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2018

KfW mission visit. Chetumal Bay, Mexico.



2018

Adriana Navarro Ramírez and Jens Mackensen during the presentation of the book *Written with Blue Ink.* Guatemala City, Guatemala.



2018

MAR Leaders. Puerto Morelos, Mexico.



2019

Board of directors meeting. Roatán, Honduras.



2019

Board of directors' visit to partners. Roatán, Honduras.



2019

Field visit to the "Island Honey" community beekeeping project. Roatán, Honduras.



2019

Elisa Areano and Cheri Recchia at a Healthy Reefs for Healthy People meeting. Belize City, Belize.



2019

MAR Fund team. Guatemala City, Guatemala.



2020

MAR Fund team at their annual retreat.



2022

Post-Storm Coordination Response Committee for Reef Rescue. Guatemalan Caribbean.



2023

María José González at the 25th RedLAC Assembly. Cusco, Perú.

2023

Board of directors meeting. Guatemala City, Guatemala.





2024

Board of directors meeting. Puerto Barrios, Guatemala.



2024

Gina De Ferrari and Carlos Vijil during a board of directors meeting. Guatemala City, Guatemala.



2025

Guests during the celebration of MAR Fund's 20th anniversary. Cancún, Mexico.



2025

Sylvia Marín during the celebration of MAR Fund's 20th anniversary. Guatemala City, Guatemala.

2025

MAR Fund's 20th anniversary celebration. Guatemala City, Guatemala.





2026

MAR Fund's 20th anniversary celebration. Roatán, Honduras.



2026

MAR Fund's 20th anniversary celebration. Belize City, Belize.



2026

Recognition of Concepción Molina Islas for her 19 years of volunteer service on the Grants and Evaluation Committee.



Mangroves. Belize
Photo: Amy Jones

II. Notable Dates and Events

"DESPITE THE REEFS HAVING EXISTED FOR THOUSANDS OF YEARS, IT WAS NECESSARY TO CREATE AND FORGE A 'MESOAMERICAN REEF' IN THE PUBLIC'S COLLECTIVE IMAGINATION TO ALLOW FOR THE REGION'S CONSERVATION AND SUSTAINABLE MANAGEMENT."

JUAN E. BEZAURY-CREEL

1943 – Jacques Cousteau and Émile Gagnan invented the Aqua-Lung system, also known as self-contained underwater breathing apparatus (SCUBA), which revolutionized exploration of the underwater world and allowed for the widespread popularity of diving.

1955 – In Guatemala, the Río Dulce National Park was established along the shores of El Golfete and the Río Dulce. Although it is connected to the sea, the protected area did not include marine environments.

***ca* 1969 –** Honduras began attracting tourists interested in its coral reefs, particularly on the island of Roatán, where the first tourist complexes were constructed and SCUBA diving was promoted as one of the island's main attractions.

1961 – Jacques Cousteau and his team documented the splendor of the coral reefs of Cozumel, Mexico, particularly the Palancar Reef, bringing international recognition to the island as a premier diving destination.

1969 – The Belize Audubon Society (BAS) was established in Belize as a chapter of the Florida Audubon Society and became an independent organization in 1973. It is Belize's oldest non-governmental organization, dedicated to the sustainable management of natural resources through leadership and strategic partnerships to achieve a balance between people and the environment.

1970s – Dive tourism on Isla Mujeres, Mexico, became firmly established, coinciding with the rapid growth of tourism in Quintana Roo. In 1973, one of the world's first marine protected areas was established in the region.

1971 – Aboard the research vessel *Calypso*, Jacques Cousteau and his crew explored Belize's Great Blue Hole, a massive circular underwater sinkhole located within Lighthouse Reef. The documentary *Secrets of the Sunken Caves* was released the same year.

1971 – Jacques Cousteau and his team visited Isla Contoy, Mexico, to document the annual migration of the Caribbean spiny lobster. The resulting documentary titled *The Incredible March of the Spiny Lobsters*, was released in 1976.

1973 – Mexico established the Costa Occidental de Isla Mujeres Marine Flora and Fauna Refuge, which includes the Punta Cancún and Nizuc reefs, one of the first protected areas in the Americas created specifically to protect coral reef ecosystems. In 2000, the decree was updated and the area was redesignated as a national park.

1975 – Explorer and producer Ramón Bravo, creator of the television series *Reino Marino*, *Mi amigo el mar*, and *El mundo submarino de Ramón Bravo*, helped pioneer underwater nature journalism in Mexico. He was the first to film the *Cave of the Sleeping Sharks*, discovered by fisherman Carlos García Castilla ("El Válvula"), serving as Jacques Cousteau's guide and underwater cameraman for the documentary *The Sleeping Sharks of Yucatán*, released that same year.

1977 – In what was then British Honduras (now Belize), the United Kingdom designated seven bird sanctuaries under the Crown Lands Ordinance to protect colonies of major importance for the nesting and resting of coastal and seabirds. Following Belize's independence in 1981, a number of these areas were reorganized under the country's national protected areas legislation.

***ca.* 1978 –** The Regional Fisheries Research Center (CRIP) was established in Puerto Morelos, Mexico, under the National Institute of Fisheries and Aquaculture. At the end of 2023, it was renamed the Regional Aquaculture and Fisheries Research Center (CRIAP), formally incorporating aquaculture into its mandate and becoming part of the Mexican Institute for Sustainable Fisheries and Aquaculture Research (IMIPAS).

1979 – The Quintana Roo Research Center (CIQRO) was established in Puerto Morelos, Mexico, as a decentralized agency of the state executive branch. Research conducted at this institution provided the scientific basis for the creation of the future Sian Ka'an Biosphere Reserve. In 1995, CIQRO was dissolved, and its assets and programs were transferred to El Colegio de la Frontera Sur (ECOSUR).

1980s – Dive tourism in Belize expanded significantly after the country's independence in 1981, as tourism infrastructure developed rapidly. The growing popularity of diving along the Belize Barrier Reef established tourism as the country's second most important industry.

1980 – Mexico established the Costa Occidental de la Isla de Cozumel Refuge Zone for the Protection of Marine Flora and Fauna, which was redesignated in 2000 as the Arrecifes de Cozumel National Park.



1982 – Expanding a bird sanctuary established in 1928 under the Crown Lands Ordinance, Belize created Half Moon Caye Natural Monument, encompassing part of the eastern wall of Lighthouse Reef. In 1996, it was inscribed on the UNESCO World Heritage List as one of the sites of the Belize Barrier Reef Reserve System. Today, it is a protected area co-managed by the Belize Audubon Society.

1984 – The Puerto Morelos Station of the Institute of Marine Sciences and Limnology of the National Autonomous University of Mexico (UNAM) was established in Quintana Roo. It is now the Academic Unit for Reef Systems (UASA).

1986 – Mexico established the Sian Ka'an Biosphere Reserve, which was later expanded to include all of its coral reefs through a 1998 decree.

1986 – The organization Amigos de Sian Ka'an was founded in Mexico. It later expanded its mission to conserve the integrity and functionality of the ecosystems of the Yucatán Peninsula by promoting the socioeconomic development of local communities and influencing science-based environmental policies and culture.

1987 – Belize established the Hol Chan Marine Reserve, the country's first marine protected area. It is currently co-managed by the Hol Chan Trust Fund Committee and the national government.

1987 – Honduras established the Cuero y Salado Wildlife Refuge. In 1989, the decree was amended, and the Cuero y Salado Foundation (FUCSA) was created and assigned responsibility for managing the refuge.

1989 – The International Coastal Resources Management Workshop was held in San Pedro, Ambergris Caye, Belize. The workshop promoted the adoption of an integrated coastal management approach for the country.

1990 – Belize established the Coastal Zone Management Unit and a Technical Committee responsible for coordinating efforts among government agencies, academic and research institutions, non-governmental organizations, the private sector, and coastal communities.

1990 – In Guatemala, the founding charter and government decree establishing the Foundation for Ecodevelopment and Conservation (FUNDAECO) were signed. The organization is dedicated to nature conservation and the promotion of sustainable community development.

1990-1992 – Amigos de Sian Ka'an, Biocenosis, and the Institute of Marine Sciences and Limnology of the National Autonomous University of Mexico (UNAM) initiated studies to classify the coral reefs of Quintana Roo within the Sian Ka'an Biosphere Reserve. The results were published in 1993 in the journal *Sian Ka'an*, Document Series, No. 1.

1991 – The Bay Islands Conservation Association (BICA) was established in Honduras to protect the natural resources of the Bay Islands.

1991 – Establishment of the Autonomous University of the State of Quintana Roo (UQROO).

1991 – Belize created the Laughing Bird Caye National Park, which was inscribed on the UNESCO World Heritage List in 1996 as one of the sites of the Belize Barrier Reef Reserve System. It is currently co-managed by the Southern Environmental Association.

1991 and 1994 – Honduras established Abogado Agustín Córdova Rodríguez Marine National Park in the Swan Islands (or Santanilla Islands).



1992 – The United Nations Conference on Environment and Development (Earth Summit) was held in Rio de Janeiro, Brazil.

1992 – Honduras established the Punta Izopo Wildlife Refuge, which was reclassified as a national park in 2000.

1992-1994 – A consortium led by Amigos de Sian Ka'an carried out coral reef characterization studies in the Cancún–Tulum corridor. The results were published in 1995 in *Sian Ka'an*, Document Series, No. 4.

1993 – Belize launched the pilot phase of its Coastal Zone Management Project, funded by the Global Environment Facility (GEF) with the United Nations Development Programme (UNDP) serving as the implementing agency under the project "Conservation and Sustainable Use of the Belize Barrier Reef Complex." Supported by additional funding from the European Union, the initiative enabled coastal zone management to become a permanent and well-established national program.

1993 – Belize established Glover's Reef Marine Reserve, which was inscribed on the UNESCO World Heritage List in 1996 as part of the Belize Barrier Reef Reserve System. Since 1997, the Wildlife Conservation Society has operated a research station on Middle Caye.

1993 – Honduras established the protected area of the Cayos Cochinos Archipelago. In 2003, it was designated a Marine Natural Monument. Previously, it had been referred to as a Biological Reserve, although it had never officially held that designation.

1993-1994 – Amigos de Sian Ka'an carried out coral reef characterization studies in southern Quintana Roo, between Tampalam and Bacalar Chico. The results were published in 2005 in *Sian Ka'an*, Document Series, No. 6.

1994 – The Mexican Fund for the Conservation of Nature (FMCN) was established as a private organization that channels financial resources and builds partnerships to protect Mexico's natural heritage.

1994 – Mexico established the Yum Balam Flora and Fauna Protection Area, which includes marine waters in the Gulf of Mexico.

1994 – The International Coral Reef Initiative (ICRI) was created as an informal partnership of countries, international organizations, and non-governmental organizations to support coral reef conservation worldwide.

1994 – The Coral Reef Alliance (CORAL) was established in the United States as an organization dedicated exclusively to coral reef conservation, with a primary focus on the Mesoamerican Reef.

1994 – Honduras established Punta Sal National Park, co-managed by the Lancetilla, Punta Sal and Texiguat Protection Foundation. The park was later renamed Jeannette Kawas National Park in honor of the environmental activist murdered in 1995 for defending the area against the expansion of African oil palm plantations.

1994 – The Inter-American Development Bank began supporting the sustainable development of the Bay Islands, Honduras, through the "Bay Islands Environmental Management Project," followed in 2002 by the "Bay Islands Ecosystem Management Project."

1995 – The Regional Environmental Program for Central America/ Coasts (PROARCA/Coasts) was launched in Central America by the Central American Commission on Environment and Development (CCAD), with financial support from the United States Agency for International Development (USAID) and technical assistance from a consortium led by The Nature Conservancy, WWF, and the Coastal Resources Center of the University of Rhode Island. One of its four program areas focused on the Gulf of Honduras, involving Belize, Guatemala, and Honduras.

1996 – Mexico established the Banco Chinchorro Biosphere Reserve, protecting the pseudo-atoll located in southern Quintana Roo.

1996 – With support from PROARCA/Costas, nine organizations from Belize, Guatemala, and Honduras established the Tri-national Alliance for the Conservation of the Gulf of Honduras (TRIGOH) to harmonize policies for the management of the Gulf's marine and coastal areas and to coordinate management and research activities among its members. The founding members were FUNDAECO, the Mario Dary Rivera Foundation for the Conservation of the Environment and Natural Resources (FUNDARY), Ak' Tenamit (which means "New Village" in Q'eqchi'), and the Fundación Defensores de la Naturaleza (FDN) from Guatemala; the Toledo Institute for Development and Environment (TIDE), the Belize Institute for Environmental Law and Policy (BELPO), and the Sarstoon Temash Institute for Indigenous Management (SATIIM) from Belize; and the Lancetilla, Punta Sal and Texiguat Protection Foundation (PROLANSATE) and the Omoa Conservation Corps Association (CCO) from Honduras.

1996 – As part of the Biodiversity Support Program, WWF published "A Conservation Assessment of Mangrove Ecosystems of Latin America and the Caribbean," which identified mangrove forests—from the northern boundary of the Sian Ka'an Biosphere Reserve in Mexico to the northern limit of the Belize–Guatemala border—as vulnerable and high-priority conservation units.

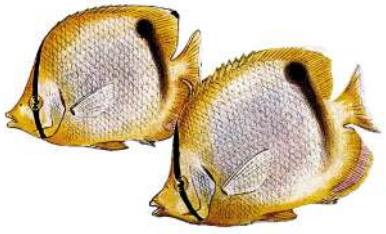
1996 – Belize enacted the legislation known as the PACT Act, which established the Protected Areas Conservation Trust (PACT) as a financial mechanism to support the management of protected areas. The initiative responded to the rapid growth of tourism and the need for sustainable funding to conserve the natural resources on which the industry depends.

1996 – Guatemala established the Bocas del Polochic Wildlife Refuge, which is co-managed by the Foundation for the Defense of Nature (FDN).

1996 – The Government of the State of Quintana Roo established the Laguna Colombia State Refuge for Flora and Fauna, a State Ecological Conservation Area located on the island of Cozumel.

1996 – Amigos de Sian Ka'an and Biocenosis carried out a characterization of the coral reefs surrounding the island of Cozumel. The results were published in 2017 in *Sian Ka'an*, Document Series, No. 7.

1996 – Belize established the Sapodilla Cayes Marine Reserve, which was inscribed that same year on the UNESCO World Heritage List as part of the Belize Barrier Reef Reserve System. This group of cays—also known as the Zapotillos Cays—is located in the Gulf of Honduras and is administered by Belize. However, Guatemala claims that the maritime boundary between the two countries lies northwest of the cays, while Honduras maintains that its 1982 Constitution recognizes the cays as part of Honduran territory.



1996 – Belize established the South Water Caye Marine Reserve, which was also inscribed on the UNESCO World Heritage List that same year as part of the Belize Barrier Reef Reserve System. The reserve is currently administered by the Belize Fisheries Department through its Ecosystems Management Unit.

1996 – Belize established the Blue Hole Natural Monument, located at the center of Lighthouse Reef. It was inscribed that same year on the UNESCO World Heritage List as part of the Belize Barrier Reef Reserve System and is currently co-managed by the Belize Audubon Society.

1996 – Belize established Bacalar Chico National Park and Bacalar Chico Marine Reserve, two legally distinct protected areas that share the

same boundaries. Both were inscribed that same year on the UNESCO World Heritage List as part of the Belize Barrier Reef Reserve System. They are currently co-managed by the Sarteneja Alliance for Conservation and Development.

1996 – The Government of Quintana Roo established the Santuario del Manatí Bahía de Chetumal Ecological Conservation Area, which was reclassified as a State Reserve in 2008.

1996 – At the end of the year, Belize secured the inscription of the Belize Barrier Reef Reserve System on the UNESCO World Heritage List. The serial property comprises the protected areas of Bacalar Chico, Laughing Bird Caye, Blue Hole, Half Moon Caye, South Water Caye, Glover's Reef, and Sapodilla Cayes.

1996 – Guatemala established the Manantiales de Cerro San Gil Protection Reserve.

1997 – The first International Year of the Reef was celebrated within the framework of the International Coral Reef Initiative (ICRI).

1997 – The heads of state of Belize, Guatemala, Honduras, and Mexico traveled the Chunyaxché Canal to Boca Paila within the Sian Ka'an Biosphere Reserve and, at Tulum National Park, adopted the Mesoamerican Caribbean Reef Systems Initiative through the signing of the Tulum Declaration.

1997 – Amigos de Sian Ka'an submitted a concept proposal to the World Bank requesting Global Environment Facility (GEF) funding to establish the Mesoamerican Reef Conservation Trust Fund (FOMECAR). The proposal was not approved.

1997 – Honduras established the Bay Islands National Marine Park. In 2010, its founding decree was amended through the Special Law on Protected Areas of the Bay Islands, incorporating additional national parks, wildlife refuges, marine protection zones, fishing-restricted areas, and economic development areas, including Port Royal National Park; Turtle Harbour Wildlife Refuge; the marine special protection zones of

Half Moon Caye–Southwest Caye, Michael Rock, Sandy Bay–West End, Santa Elena–Barbareta, Calabash Bight–New Port Royal, Raggedy Cay–Southwest Cay, and Turtle Harbour–Rock Harbour; as well as West End–Blue Rock Point and Coco View–Caribbean Point, and Mud Hole–Crawfish Rock.

1997 – The Toledo Institute for Development and Environment (TIDE) was formally established, driven by community members seeking to combat illegal fishing and the hunting of manatees. TIDE currently holds co-management arrangements for the Port Honduras Marine Reserve, Payne's Creek National Park, and the Sapodilla Cayes Marine Reserve.

1997-1999 – Amigos de Sian Ka'an carried out three research expeditions to conduct a detailed characterization of the reefs of Banco Chinchorro. The results were published in 2017 in *Sian Ka'an*, Document Series, No. 7.

1998 – Within the framework of the International Coral Reef Initiative (ICRI), The Nature Conservancy together with Amigos de Sian Ka'an organized a workshop in Cancún, Mexico, on the status of coral reefs in Mexico and the Gulf of Mexico, focusing on assessment, management and conservation. The workshop was convened to present the results of two projects funded by the Commission for Environmental Cooperation (CEC): Implementation of ICRI in Mexico, prepared by Amigos de Sian Ka'an, and Review of Methods for Assessing the Status of Mexico's Coral Reefs, prepared by the Center for Research and Advanced Studies (CINVESTAV–Mérida).

1998 – A mass coral bleaching event occurred throughout the Mesoamerican Reef, associated with extreme oceanographic conditions and the effects of Hurricane Mitch in the Bay Islands region of Honduras.



1998 – Belize established the Caye Caulker Forest Reserve and the Caye Caulker Marine Reserve, both co-managed by the Forest & Marine Reserves Association of Caye Caulker.

1998 – Belize created the Corozal Bay Wildlife Sanctuary, co-managed by the Sarteneja Alliance for Conservation and Development.

1998 – Mexico's National Institute of Ecology, the United Nations Development Programme (UNDP), the World Bank, and The Nature Conservancy convened a national coordination meeting in Cancún for the Mesoamerican Caribbean Coral Reef Initiative, within the framework of the Southeastern Mexico Mesoamerican Biological Corridor Workshop.

1998 – Mexico established the Arrecife de Puerto Morelos National Park and Isla Contoy National Park. The terrestrial portion of Isla Contoy had previously been designated a Natural Reserve and Wildlife Refuge in 1961 to protect colonies of coastal and seabirds. Its marine zone includes the Islaché Reef Complex, the northernmost reef group of the Mesoamerican Reef.

1999 – Belize, Guatemala, Honduras, and Mexico, under the leadership of the Central American Commission on Environment and Development (CCAD), approved the Mesoamerican Reef System Action Plan, aimed at promoting the sustainable development of the ecoregion through a 15-year strategic vision.

1999 – As part of the Biodiversity Support Program, The Nature Conservancy published "Setting Geographic Priorities for Marine Conservation in Latin America and the Caribbean," which identified the Central Caribbean marine ecoregion, including the Mesoamerican Reef, as one of the six highest-priority marine ecoregions for conservation in the region.

1999 – Guatemala established the Punta de Manabique Wildlife Refuge, the country's first

protected area to include marine environments. The refuge was co-managed by the Mario Dary Rivera Foundation (FUNDARY) until 2011 and has since been administered by the National Council of Protected Areas (CONAP).

1999-2008 – Belize saw the implementation of the second phase of the Coastal Zone Management Project titled "Conservation and Sustainable Use of the Belize Barrier Reef Complex," financed by the Global Environment Facility (GEF) and implemented by the United Nations Development Programme (UNDP) with US$5.355 million in GEF funding and US$2.085 million in co-financing.

2000 – The Fundación para la Conservación de los Recursos Naturales y de Ambiente en Guatemala (FCG) was established, becoming the country's private environmental fund. The organization is a non-profit, non-partisan institution dedicated to conservation, ecological, scientific, educational, technological, and cultural purposes.

2000 – With the support of the local community, the Mexican government designated the Arrecifes de Xcalak National Park along the country's border with Belize.

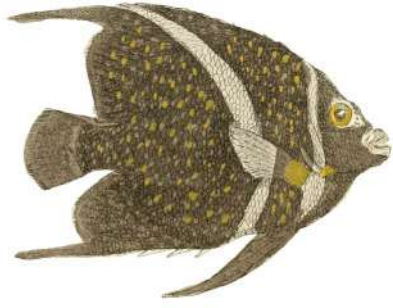
2000 – The University of Belize was created through the merger of five academic institutions. Today it operates two research and innovation facilities: the Calabash Caye Field Station on Turneffe Atoll and the Hunting Caye Marine Site in Sapodilla Cayes.

2000 – A threat analysis and root causes assessment for the Mesoamerican Reef, financed by the Food and Agriculture Organization of the United Nations (FAO), was published. It identified the greatest threats to the reef system as unsustainable coastal and island development, unsustainable tourism, improper use of natural resources and land, industrial expansion, overfishing, inappropriate aquaculture development, inadequate port management, and extreme oceanographic and climatic events.

2000 – The United Nations Environment Programme (UNEP) established the Coral Reef Unit, with the mandate to coordinate international funding and cooperation for the International Coral Reef Action Network (ICRAN).

2000 – Belize established the Gladden Spit and Silk Cayes Marine Reserve, currently co-managed by the Southern Environmental Association.

2000 – Belize established the Port Honduras Marine Reserve, co-managed by the Toledo Institute for Development and Environment (TIDE).



2001-2006 – With financial support from USAID, the Central American Commission on Environment and Development (CCAD) implemented the Regional Environmental Program for Central America II (PROARCA II). Its Protected Areas and Environmental Marketing component, implemented by The Nature Conservancy, identified the Gulf of Honduras, encompassing Belize, Guatemala, and Honduras, as one of its key functional landscapes.

2001-2008 – In support of the Mesoamerican Reef (MAR) Initiative, the World Bank, acting as the implementing agency for the Global Environment Facility (GEF), approved a regional project titled Conservation and Sustainable Use of the Mesoamerican Barrier Reef, with US$11 million in GEF financing and US$13.2 million in co-financing.

2001 – In Guatemala, the Ministry of Environment and Natural Resources formally established the National Reef Committee (CAN) through Ministerial Agreement 164-2001. Composed of 14 institutions, the committee was created to advise

on and evaluate activities affecting the MAR.

2001 – Through Agreement No. 457-2001, the Government of Honduras established the Honduran Reef Committee, bringing together public institutions, academia, local governments, communities, civil society organizations, the armed forces, and the private sector to coordinate conservation and management actions for the MAR within the country.

2001 – The Belize–Mexico Alliance for the Management of Shared Marine and Coastal Resources (BEMAMCCOR) was proposed as a binational forum for consultation, coordination, and joint management of shared marine and coastal resources between Belize and Mexico. The initiative brought together civil society organizations, academic institutions, and managers of protected areas from both countries. Belizean participants included GreenReef, the Belize Institute for Environmental Law and Policy (BELPO), the San Pedro Tour Guide Association, the University of Belize, and the managers of Bacalar Chico and Hol Chan. Mexican participants included Amigos de Sian Ka'an, Amigos del Manatí, the College of Biologists Graduated from the Chetumal Institute of Technology (COBIOTEC), ECOSUR, UQROO, and the directors of the Banco Chinchorro, Arrecifes de Xcalak, and Santuario del Manatí Bahía de Chetumal protected areas. In 2002, the CCAD participated in the alliance's regular meeting in Corozal, Belize, where it presented the CSUMBRS Project and explored the possibility of the alliance serving as the Northern MAR Transboundary Parks Commission.

2002 – Belize established the Swallow Caye Wildlife Sanctuary, which is currently co-managed by Friends of Swallow Caye.

2002 – Honduras established the Fundación Biosfera as an environmental trust fund.

2002 – WWF published *The Global 200*, which identified the Mesoamerican Reef marine ecoregion as one of the world's priority ecoregions for conservation.

2002 – WWF published the *Mesoamerican Reef Ecoregional Conservation Plan*.

2002-2004 – Amigos de Sian Ka'an conducted a comprehensive characterization of Arrowsmith Bank, located off the northern coast of Quintana Roo. The results were later published in 2017 in *Sian Ka'an*, Document Series, No. 7.

2003 – Belize began protecting fish spawning aggregations.

2004 – MAR Fund was established as a regional financial mechanism to support the conservation and sustainable use of the Mesoamerican Reef.



2004 – The Healthy Reefs for Healthy People (HRHP) initiative was established. It coordinates the work of more than seventy organizations to produce the region's Mesoamerican Reef Report Card every two years.

2005 – Guatemala established the Río Sarstún Multiple Use Area by means of a legal decree. On-the-ground management is supported by the Amantes de la Tierra Indigenous Farmers' Association/FUNDAECO consortium. Río Sarstún borders Sarstoon-Temash National Park in Belize, together forming a binational terrestrial and riverine conservation corridor co-managed by the Sarstoon Temash Institute for Indigenous Management (SATIIM).

2006 – Meeting in Panama City, the presidents of Mexico, Guatemala, and Honduras, together with the Prime Minister of Belize, reaffirmed the Mesoamerican Caribbean Reef Systems Initiative, originally adopted through the Tulum Declaration in 1997.

2008 – The Nature Conservancy published the "Mesoamerican Reef Ecoregional Assessment: Marine Conservation Plan," developed using MARXAN analyses and participatory workshops held in Antigua Guatemala, San Pedro Sula, and Belize City. The assessment identified 31 priority sites for marine conservation across the region.

2009 – Mexico established the Tiburón Ballena Biosphere Reserve, located in the transition zone between the Gulf of Mexico and the Caribbean Sea.

2010 – The Mesoamerican Reef Leadership Program (MAR Leadership) was launched as an initiative of the Mexican Fund for Conservation of Nature (FMCN), with funding from the Summit Foundation. It is currently managed by Sureste Sostenible.

2010 – Honduras officially established the Bay Islands National Marine Park.

2010s – The Institute of Biology of the National Autonomous University of Honduras, through the Institute for Research in Biological Sciences of Northern Honduras (IBIOAH), developed the Marine and Coastal Ecosystems Research Program.

2011 – With support from The Nature Conservancy, the Government of Honduras published the study "Analysis of Gaps and Omissions of Ecological Representativeness of the Marine Biodiversity of Honduras," which identified 54 priority sites that were underrepresented within the national protected areas system.

2011 – The Kanan Kay Alliance ("Guardian of the Fish" in the Maya language) was established as a cross-sectoral collaborative initiative to promote responsible fisheries management throughout the Yucatán Peninsula. Since 2022, the Alliance has been managed by Sureste Sostenible.

2011 – The Government of Quintana Roo established the Selvas y Humedales de Cozumel State Reserve.

2012 – By means of a legal decree, Mexico created the Porción Norte y la Franja Costera Oriental, Terrestres y Marinas de la Isla de Cozumel Flora and Fauna Protection Area.

2012 – Belize established the Turneffe Atoll Marine Reserve, which is currently co-managed by the Turneffe Atoll Sustainability Association.

2015 – During his campaign for Governor of Quintana Roo, Carlos Joaquín González pledged to "plant one coral" for every vote he received. After taking office in 2016, he signed a collaboration agreement with IMIPAS to implement a coral reproduction and planting program through the CRIAP (Centro de Rehabilitación Integral) in Quintana Roo.

2016 – Mexico established the Caribe Mexicano Biosphere Reserve, which, at more than 5.5 million hectares, is the largest marine protected area within the Mesoamerican Reef.

2016 – During the 13th Conference of the Parties to the Convention on Biological Diversity, held in Cancún, the MAR Leadership Program, Healthy Reefs for Healthy People, and MAR Fund organized side events to showcase progress in the conservation and sustainable use of the Mesoamerican Reef's coastal and marine resources since the signing of the Tulum Declaration in 1997.

2016 – Belize's Integrated Coastal Zone Management Plan was completed by the Coastal Zone Management Authority and Institute and formally approved by the country's Cabinet.

2017 – With more than US$13 million in funding from USAID over a seven-year period, the International Union for Conservation of Nature (IUCN) coordinated the Regional Coastal Biodiversity Project for Central America. Within the Mesoamerican Reef region, the project focused on three priority sites: Puerto Barrios in Guatemala, and Omoa and the Karataska Lagoon Complex in

Honduras. IUCN implemented the project in partnership with GOAL International as the regional partner, together with IUCN member organizations including the Fundación Defensores de la Naturaleza (FDN), the Wildlife Rescue and Conservation Association (ARCAS), and the Semillas del Océano Association (SDO) in Guatemala, as well as the Center for Marine Studies (CEM) and the Omoa Conservation Corps Association (OMOA-CCO) in Honduras.

2018 – With US$9.83 million in funding from the Global Environment Facility (GEF), channeled through WWF as the implementing agency for a five-year period, the Central American Commission on Environment and Development (CCAD) coordinated the project Integrated Ridge to Reef Management of the Mesoamerican Reef Ecoregion (MAR2R), also known as From Ridge to Reef. The project sought to create the conditions necessary to coordinate the efforts of regional, national, and local stakeholders in adopting an integrated watershed management approach throughout the Mesoamerican Reef.

2018 – The State of Quintana Roo established the Institute of Biodiversity and Protected Natural Areas (IBANQROO) as a decentralized administrative body under the State Ministry of Ecology and Environment.

2018 – Aquatica Submarines, in collaboration with Fabien Cousteau, Richard Branson, and submersible pilot Erika Bergman, used advanced sonar technology to produce the first complete three-dimensional digital model of the interior of Belize's Blue Hole.



2018 – Honduras established the Tela Bay Marine Wildlife Refuge, which encompasses approximately 68% of the bay's surface area.

2018 – UN Environment, Mexico's Ministry of Environment and Natural Resources (SEMARNAT), the National Commission of Natural Protected Areas (CONANP), the Mexican Fund for the Conservation of Nature (FMCN), and the French Development Agency (AFD) convened the workshop "Developing and Implementing a Sustainable Blue Economy for the Cayman Ridge and Cayman Trench Region" in Playa del Carmen. The workshop was the first to explicitly address the deep-ocean portion of the Mesoamerican Reef ecoregion.

2018 – The Trust for Integrated Coastal Zone Management, Social Development, and Public Security of the State of Quintana Roo was established to channel financial resources and ensure the continuity and transparency of investments supporting the sustainable development of the state's coastline.

2019 – The Nature Conservancy, with support from CONANP, CRIP-INAPESCA, Oceanus, MAR Fund, and the CCAD, published the "Early Warning and Rapid Response Protocol: Actions to Mitigate the Impact of Tropical Cyclones on Coral Reefs." With funding from MAR Fund, the protocol was updated in 2025, and a new edition is scheduled for publication in 2026.

2019 – The Nature Conservancy and the Government of Quintana Roo purchased a parametric insurance policy to provide immediate funding for the restoration of coral reefs and beaches following hurricanes. The policy was triggered for the first time in 2020 after Hurricane Delta, generating a payout of approximately US$782,000. The policy, purchased through the Trust for Integrated Coastal Zone Management, Social Development, and Public Security of the State of Quintana Roo, cost approximately US$232,000 that year.

2020 – Along the maritime boundary between Belize and Guatemala, the two countries agreed on joint conservation measures for the reef formation known as Cayman Crown (Corona Caimán). Belize expanded the Sapodilla Cayes Marine Reserve to include Cayman Crown, while Guatemala established a ten-year fishing closure for Corona Caimán.

2022 – The MAR+Invest initiative was launched as a blended-finance mechanism to invest in market-based solutions that strengthen the health and resilience of coral reefs and the communities that depend on them throughout the countries of the MAR. The initiative is implemented through a partnership among MAR Fund, FMCN/Sureste Sostenible, Healthy Reefs for Healthy People, and New Ventures/VIWALA, with funding from the Global Fund for Coral Reefs.

2024 – The world experienced the fourth global coral bleaching event, the most extensive ever recorded, driven by exceptionally warm ocean temperatures that affected coral reefs across multiple ocean basins.

2025 – Legislators, government officials, and partners of the MAR+Invest initiative organized the dialogue "Voices for the Mesoamerican Reef: Toward a Regional Agenda Based on Science, Cooperation, and Legislation" at the Mexican Senate. Among other topics, participants discussed legislative initiatives aimed at conserving the Cayman Crown.



III. Historical Donors

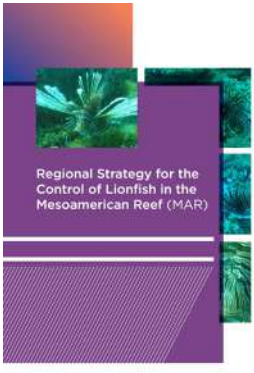
We thank the German Development Cooperation, through KfW, for its leadership and longstanding commitment to the Mesoamerican Reef, which has been instrumental in strengthening this collective effort. We also express our deep gratitude to the following contributors:

- 10% For The Ocean
- 4Ocean
- Acacia LLP
- Adaptation Fund Climate Innovation Accelerator (AFCIA) / United Nations Development Programme
- Agencia Estatal Superior de Investigaciones Científicas (CSIC)
- Avina Foundation
- Both ENDS
- Brazilian Biodiversity Fund (FUNBIO)
- BRIDGE Project / Asociación Costa Rica por Siempre
- Cardiff University
- Central American Commission on Environment and Development (CCAD)/ General Secretariat of the Central American Integration System (SG-SICA)/ MAR2R Project
- Chicago Jewish Day School
- Code Blue Charitable Foundation
- Compton Foundation Inc.
- Comunidad y Biodiversidad (COBI)
- Conservation International
- El Colegio de la Frontera Sur (ECOSUR)
- Fondo de la Iniciativa para las Américas
- French Facility for Global Environment (FFEM) / French Development Agency
- Fundación Fondo Centroamericano de Mujeres (FCAM)
- Fundación Fondo Naturaleza Chile
- Fundación para la Conservación de los Recursos Naturales en Guatemala
- German Cooperation through KfW
- German Embassy in Guatemala
- Global Affairs Canada / Ocean Risk and Resilience Action Alliance Inc.
- Global Giving Foundation

- Global Fund for Coral Reefs (GFCR) / United Nations Development Programme (UNDP)
- InsuResilience Solutions Fund/ Frankfurt School of Finance & Management GmbH
- JRS Biodiversity Foundation
- Leo Burnett UK
- Logística de Restaurantes, S.A. (Dim Sum Tea House)
- Love Animals.org
- Marisla Foundation / Global Greengrants Fund
- Mexican Fund for the Conservation of Nature
- National Fish & Wildlife Foundation (NFWF)
- National Geographic Society
- National Oceanic and Atmospheric Administration
- Network for Good
- Niparajá, A.C.
- North American Association for Environmental Education
- Oak Foundation
- Oceans 5 / Rockefeller Philanthropy Advisors, Inc.
- Paul M. Angell Family Foundation
- Protected Areas Conservation Trust
- PROCARIBE+ Project / United Nations Office for Project Services (UNOPS)
- Smithsonian Institution
- Stockholm Resilience Centre, Blue Planet Fund, Global Resilience Partnership/ Ocean Risk and Resilience Action Alliance Inc./ Stockholm University
- The Coral Reef Alliance (CORAL)
- The Curtis and Edith Munson Foundation
- The David and Lucile Packard Foundation
- The Flotilla Charitable Foundation
- The Fondation de l'Orangerie for Individual Philanthropy
- The Henry Foundation
- The International Exchange (TIE)
- The Nature Conservancy
- The Oak Hill Fund
- The Ocean Foundation
- The Overbrook Foundation
- The Prince Albert II of Monaco Foundation
- The Summit Foundation
- The University of Queensland
- UBS Financial Services, Inc.
- United Nations Environment Programme (UNEP)
- University of Miami - RSMAS
- World Wildlife Fund (WWF)
- Worth Wearing LLC

IV. Books That Tell the Story of the Mesoamerican Reef

Over the last years, MAR Fund has published a series of books that portray an intimate rendering of the reef and those who call it home. These volumes tell the story of a region whose resilience is sustained by its stories, its people, and the ebb and flow of its tides.



Regional Strategy for the Control of Lionfish in the Mesoamerican Reef (MAR)

Authors: González, M. J., González, C., Rivas, A. B., Rodríguez Olivet, C., Gourdin, F., Gómez, R., Torres, R., Ordóñez, J. and Dávila, V.

Year of publication: 2014.

Description: Regional strategy coordinating the first joint response to lionfish in the MAR, aimed at protecting reefs and communities.



Written with Blue Ink: Stories about the conservation of the Mesoamerican Reef System

Authors: Adriana Navarro Ramírez; MAR Fund.

Year and country of publication: 2018, Guatemala.

Description: True stories that follow fishers, park rangers, and communities living in the Mesoamerican Reef and offer a record of early efforts to protect a sea that was still at risk of being lost.



Women of the MAR: Positive impact on a relevant scale

Authors: Adriana Navarro Ramírez; Roxana Chávez Elorriaga; MAR Fund.

Year of publication: 2020.

Description: A collection of profiles of women working in science, tourism, fishing, and community organizing who sustain—often silently—a large share of the efforts to defend the Mesoamerican Reef.



Written with Blue Ink 2: Breath for the sea

Authors: Adriana Navarro Ramírez; MAR Fund.

Year and country of publication: 2020, Guatemala.

Description: Stories that travel back to the same places—Mexico, Belize, Guatemala, and Honduras—to show how reefs and people change when conservation is no longer just discourse and becomes action.

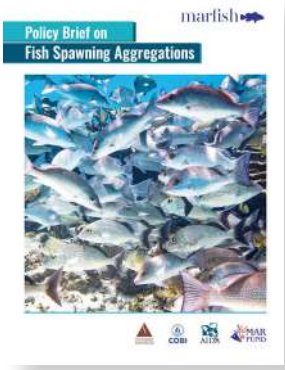


The Sea in Bildo's Eyes: A story for the fisheries of Belize

Authors: Adriana Navarro Ramírez; MAR Fund.

Year of publication: 2020.

Description: This short travel book is aimed at young readers. Through the eyes of Bildo, children learn that the reef is not just a postcard or a tourist destination; it is a neighbor who we rely on for our livelihoods.



Policy Brief on Fish Spawning Aggregations

Authors: González-Bernat, M.J., S. Fulton, A.S. Martínez and M.J. González.

Year of publication: 2021.

Description: Strategy to conserve fish aggregations in the MAR and restore fisheries through science, monitoring, and coordinated regional management.



Field Guide for Monitoring Coral Disease Outbreaks in the Mesoamerican Region

Authors: Kramer, P.R., Kramer, J., Roth, L., and D. Larios.

Year of publication: 2022.

Description: Regional program coordinating science, governance, and response to Stony Coral Tissue Loss Disease (SCTLD) in the MAR.



Status Report of Fish Spawning Aggregations in the Mesoamerican Reef

Authors: Omar Rivera and Stuart Fulton.

Year of publication: 2024.

Description: Report summarizing the status of fish spawning aggregations in the Mesoamerican Reef and their implications for fisheries.



The MAR Insurance Programme: A Nature-based Solution to Enhance Resilience

Author: Wharton, J.

Year of publication: 2024.

Description: Institutional publication on a regional parametric insurance mechanism that provides funding for reef restoration in the MAR following hurricanes, strengthening the resilience of ecosystems and communities.



Response Protocol for the Rescue of Coral Reefs Affected by Hurricanes

Authors: Padilla Souza, A. C., Gutiérrez Plata, S., Zepeda-Centeno, C. and Huitrón Baca, J. C.

Year of publication: 2025.

Description: Operational guide for coordinating response teams and rapid reef rescue actions in the MAR following hurricane impacts.



The Mesoamerican Reef Fund. For the people - For the reef - For the future

Author: Lee Poston.

Year of publication: 2025.

Description: MAR Fund case for support for communications and fundraising.

V. Tulum Declaration

TULUM DECLARATION

(Unofficial translation)

The presidents of Mexico, Guatemala and Honduras and the Prime Minister of Belize, meeting in the city of Tulum, Quintana Roo, Mexico, on June 5th, 1997 (World Environment Day) with the joint purpose of continuing the conversation and cooperation between Central America and Mexico initiated through the Tuxtla I and Tuxtla II agreements,

CONVINCED that the convening of the Nineteenth Special Session on the United Nations General Assembly (New York, June 23-27, 1997) offers a unique opportunity to renew our political will to continue making progress, through concrete actions, in the implementation of Agenda 21 adopted at the Earth Summit.

NOTING that Chapter 17 of Agenda 21 calls on States to identify marine ecosystems with high levels of biological diversity and productivity, such as coral reefs, and to adopt measures for their management, including the designation of protected natural areas.

RECALLING that 1997 has been declared the International Year of the Coral Reef; and that in 1994, within the framework of the United Nations Convention on Biological Diversity, the International Coral Reef Initiative was launched.

NOTING that the Belize Barrier Reef, which includes areas designated as World Heritage Sites, is considered the second-largest barrier reef in the world and that, together with the reefs of Guatemala, Honduras, and Mexico, it forms an ecosystem of global significance.

RECOGNIZING that the coral reef system is the most diverse and complex in the marine environment, with species coexisting that are broadly representative of existing groups of marine organisms; and comparable in diversity to evergreen rainforests.

CONSIDERING that coral reefs stabilize and protect coastal areas; they shelter commercially important species and provide employment and income opportunities for coastal communities through the sustainable use of terrestrial, marine, and coastal ecosystems, particularly through tourism and recreational activities.

NOTING that this reef system in Belize, Guatemala, Honduras and Mexico can be managed as a whole as a system of protected natural areas, and that productive activities dedicated to their protection can be developed in a sustainable manner.

EMPHASIZING that the four countries have, through great effort and a lengthy process, established (based on their potential use) a network of protected areas to safeguard vital ecological processes.

RECOGNIZING that regional agreements and actions are effective means of promoting the international cooperation necessary for the conservation and sustainable use of critical ecosystems, such as coral reefs.

RECALLING that the four countries are members of the Mesoamerican Biological Corridor Project, which seeks to develop comprehensive strategies for the protection and conservation of biodiversity in the region, including coastal marine areas.

NOTING that the region combines strategic heritage elements such as tropical rainforests, coral reefs, lagoons, and mangroves with archeological monuments from the Classic Maya period, creating a complex of immense appeal and potential for tourism that promotes high social and environmental stability.

PLEASED with the progress made by the Central American region within the framework of the comprehensive development strategy set forth in the Alliance for Sustainable Development (ALIDES).

REAFFIRMING Principle 2 of the Rio Declaration, according to which States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to utilize their resources in accordance with their environmental and development policies, as well as the responsibility to ensure that activities within their jurisdiction and control do not cause damage to the environment of other States.

WE HAVE DECIDED

1. To adopt the "Mesoamerican Caribbean Reef Systems Initiative," which includes Belize, Guatemala, Honduras, and Mexico;

2. To promote the conservation of the reef system through its sustainable use, thereby contributing to the wellbeing of present and future generations. To this end, the reef system shall be maintained:

    a) as environments rich in biological diversity and productivity that provide shelter and food for a wide variety of living marine resources;

    b) as agents that prevent coastal erosion;

    c) as a driver of the revenue-generating tourism industry;

    d) as a source of raw materials for the production of high-demand pharmaceuticals;

    e) as well as an effective protective barrier against hurricanes and storms.

3. To direct the authorities responsible for the environment and natural resources in each country to, with the support of the Executive Secretariat of the Central American Commission on Environment and Development (SE-CCAD), develop the Action Plan within a period not exceeding 30 days, implement the activities, and fulfill the commitments adopted under this Initiative;

4. To carry out the actions outlined in the Action plan, in particular:

    a) Support the implementation of the Mesoamerican Biological Corridor Project, which promotes the inclusion of wetlands and coastal marine areas in its initiatives;

    b) Promote scientific research in the reef system's area of influence and coordinate the research activities carried out by various institutions;

c) Promote educational development and outreach activities to reduce the impacts of human activities on reef communities, fostering community awareness that supports their conservation,

d) Establish a joint work program to reduce pollutant discharges resulting from human activities in the marine-coastal zone;

e) Establish mechanisms for exchanging information on monitoring activities; contingency planning; emergency response in the event of accidents; and other related matters;

f) Strengthen existing funding mechanisms and seek new resources;

5. To establish collaborative working relationships among our authorities responsible for natural, cultural, and tourism heritage, as well as among local authorities and communities within the reef system's area of influence, for the conservation and sustainable use of the resources of the Mesoamerican Caribbean Reef Systems;

6. To promote the development of cooperation programs and projects to achieve the initiatives' objectives, with the participation of international organizations; and

7. To report to the Nineteenth Special Session of the United Nations General Assembly the adoption of this Initiative as a contribution by our countries to the implementation of the measures set forth in Chapter 17 of Agenda 21.

Tulum, Quintana Roo, June 5th, 1997.

ON BEHALF OF THE GOVERNMENT OF THE UNITED MEXICAN STATES

Ernesto Zedillo Ponce de León,
President

FOR THE GOVERNMENT OF THE REPUBLIC OF HONDURAS

Carlos Roberto Reina,
President

FOR THE GOVERNMENT OF BELIZE

Manuel Esquivel,
Prime Minister

FOR THE GOVERNMENT OF THE REPUBLIC OF GUATEMALA

Álvaro Arzú Irigoyen,
President



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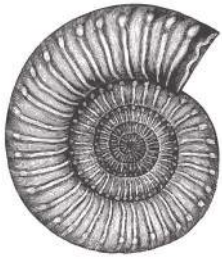
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