AN 11TH HOUR RACING CASE STUDY

Stronger Shores

Driving Coastal Resilience in Puerto Rico

Contents

It's been seven years since 11th Hour Racing first began funding organizations in Puerto Rico - identifying ecosystems under threat, regenerating critical coastal habitats, and engaging local populations in their many and varied sustainability projects. This is the story of our grantees, and why the work they do is so important to the people and the wildlife of these beautiful Caribbean islands and the ocean that surrounds them.

Nicole Pillot, Jobos Bay native and BoriCorps Member "Hurricane Maria was a wakeup call for a lot of people. We all realized we've got to go out and support our neighbors in need."

Puerto Rico has shown remarkable resilience in the face of extreme weather. Over the past seven years, the island has endured three 'once-in-a-generation' climate events – Hurricane Maria in 2017, Hurricane Fiona in 2022, and Hurricane Ernesto in 2024 – each leaving a lasting impact. As a result, 'The Island of Enchantment' has been engaged in a years-long effort to restore its natural defenses against future storms.

Historically the island's ecology has been resilient enough to defend its shorelines and recover but, to keep pace with a changing planet, a helping hand has been required more and more – whether that's from the U.S. federal or Puerto Rican authorities; global, regional and local non-governmental organizations (NGOs); or locals and island natives doing what they can to help their own island's ecosystems survive and thrive.

At 11th Hour Racing, we've been collaborating with four key partners in Puerto Rico to restore ecosystems that serve as the island's first line of defense against storm surges. The work of our grantees – The Ocean Foundation; The Vieques Conservation and Historical Trust; Protectores de Cuencas; and BoriCorps (an arm of Franklin's Promise Coalition) – is embedded in the communities they serve and includes a wide range of activities, from increasing stewardship of coastal ecosystems amongst local volunteers to large-scale mangrove replanting projects, including one in Jobos Bay that's proudly the largest mangrove restoration effort ever attempted in North America.

Our grant program was established in 2013 and, five years later, we introduced Ecosystem Restoration to our strategy when we awarded our first grant to The Ocean Foundation in Puerto Rico. At that point, its work was a direct response to one of the largest storm events to impact the island.

Hurricane Maria decimated Puerto Rico in September 2017, accounting for almost 3000 deaths. That made it the deadliest hurricane in the territory since records began, and caused more than $91.61 billion in damage. Between then and now, two more extreme tropical cyclones have made landfall in Puerto Rico – Fiona in 2022 caused an island-wide blackout while Ernesto in 2024 forced water outages and resulted in half the island losing all power.

In addition to devastating islanders' lives, the powerful waves and intense tides from these events have repeatedly destroyed critical ecosystems; therefore, without intervention, they face an increasing risk of permanent loss. This includes the extensive mangrove forests and seagrass meadows that serve as natural coastal defenses, as well as the renowned bioluminescent bay on Vieques. Our grantees focus on working with nature whenever possible to promote sustainable regeneration and long-term resilience. Let's take a closer look at the efforts of our four partners in Puerto Rico.

WHAT IS A MANGROVE?

A mangrove is a salt-tolerant tree or shrub that grows in coastal intertidal zones, providing crucial habitat for wildlife and protecting shorelines.

The Ocean Foundation

Size of Jobos Bay mangrove restoration area

1,445 acres

Areas of high salinity (normal seawater is 35 ppt)

>100 ppt

Trees planted

15,697

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The Ocean Foundation is a lynchpin organization and the grantee in Puerto Rico that we've partnered with for the longest. Since we first engaged with them in 2018, their excellent work has restored hundreds of acres of mangrove forests as well as significant areas of seagrass meadows, especially in and around the crucial Jobos Bay National Estuarine Research Reserve (JBNERR). These ecosystems were severely damaged or destroyed by Hurricane Maria (and affected again by Fiona in 2022 and Ernesto in 2024).

Besides the re-establishment of core ecosystems on the Puerto Rican coast, restoring seagrass and mangroves in this area will contribute to long-term wind and flood protection for the surrounding communities. Crucially, in light of the impacts of the recent cyclones, these communities include a power plant providing 9% of the entire island's electrical capacity and, next door, the largest solar panel farm in Puerto Rico.

On top of the work itself, The Ocean Foundation coordinates with many of our other partners - especially BoriCorps (Franklin's Promise Coalition) and the Vieques Conservation and Historical Trust. Sharing information, successes and resources is making everyone's hard work on the ground in Puerto Rico more impactful, together achieving more than ever before.

MISSION STATEMENT

Leading efforts to restore and rehabilitate mangrove forests and seagrass meadows, especially in and around the important Jobos Bay area, to help Puerto Rico's coastal communities and their ecosystems thrive in the face of a changing climate and the increasing regularity of major meteorological events that threaten island habitats.

CHALLENGE

In 2018, the marine community almost exclusively looked to mangrove conservation and some reforestation to generate blue carbon credits, leading to the widespread neglect of seagrass restoration

SOLUTION

Jobos Bay, The Ocean Foundation's first project site with 11th Hour Racing, was among the first to generate carbon offsets through the regeneration of damaged seagrass beds. As well as promoting ocean health, restoring natural coastal resilience, and improving the health and prosperity of surrounding mangroves and coral reefs, this work has introduced some system change and advanced efforts to enable that future seagrass restoration projects to be certified to offset carbon emissions (both in Puerto Rico and globally)

CHALLENGE

Expanding the Jobos Bay restoration and rehabilitation project and taking on the restoration at Camino del Indio will mean the existing mangrove nursery capacity isn't sufficient to satisfy demand

SOLUTION

The mangrove nursery's location, within the restoration site, makes expansion relatively straightforward and can be done by increasing the shaded area, installing new planting trays and adding solar panels, water pumps, and other infrastructure. This will double the nursery's capacity from 7,000 mangrove trees per year to 14,000

CHALLENGE

The disruption of water flow patterns in Jobos Bay by human infrastructure and recent hurricane events have made it more difficult for native plants to regenerate on their own

SOLUTION

To aid natural regeneration, The Ocean Foundation is reestablishing hydrological patterns through dredging – recreating ditches and channels to aid water exchange and make it easier for mangroves and seagrass to multiply alongside the replanting programs

WHERE ARE MANGROVES FOUND?

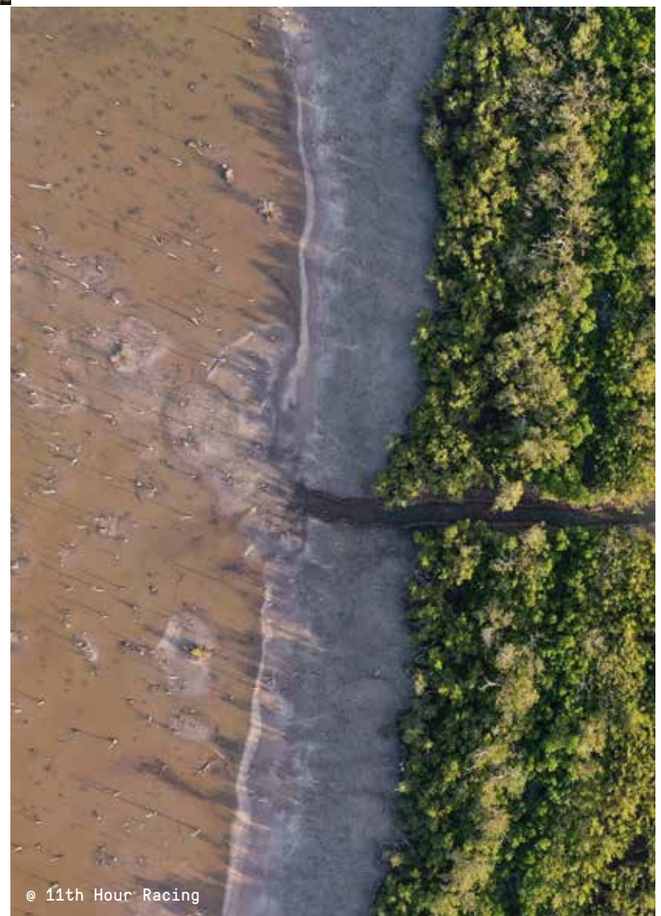
Mangroves are typically found in tropical and subtropical coastal regions, thriving in brackish water where freshwater meets the sea. In Puerto Rico, they are mainly located along the coasts, especially in areas like the Piñones State Forest near San Juan on the north coast and Jobos Bay and La Parguera in the south.

CHALLENGE

Mangrove replanting programs are yielding positive results, but the ecological activities also need to stimulate natural regeneration alongside the use of nurseries

SOLUTION

While hydrological restoration is the most critical component, The Ocean Foundation has created mangrove "dispersal centers" - small 1m-diameter planters, raised slightly above sea level, that enable mangroves to mature and disperse propagules to the surrounding area. This enhances natural regeneration alongside replanting



CHALLENGE

Significant mangrove restoration was needed at the Mata Redonda, a critical habitat used by migratory birds and a variety of marine species. However, due to its location in the middle of Jobos Bay making it highly susceptible to erosion, a unique approach was needed to ensure newly planted mangroves could survive and thrive

SOLUTION

Using 1,000 EnviroLok bags and 500 cotton sediment tubes, a "living shoreline" was created to reduce erosion and provide a safe space for a large area of seagrass and more than 1,000 red mangrove trees to be restored. The half-acre project provided learnings that were shared with another 11th Hour Racing grantee, VCHT, when erecting their own "living shoreline" on Vieques that's four times larger

MEET THE TEAM

Ben Scheelk

THE OCEAN FOUNDATION
PROGRAM OFFICER

Ben's work focuses on nature-based solutions for climate change mitigation and adaptation, and supporting coastal community resilience.

"Coastal ecosystems provide one of our best lines of defence against strengthening hurricanes. They soften waves, prevent erosion, improve water quality, and provide habitats for fish, turtles and manatees. They all depend on them, just as these communities do. Our work helps restore the quality and integrity of these coastal ecosystems, which are one of our best forms of natural infrastructure."

Aitza Pabón-Valentín

FORMER DIRECTOR OF THE JOBOS BAY NATIONAL ESTUARINE RESEARCH RESERVE

"The Ocean Foundation identified with us the need to restore the habitats damaged in the past by Hurricane Maria. Those habitats really affect our ecosystems here. If we don't act, as The Ocean Foundation is doing right now, we could lose more."

Manuel Merello

LEAD SCIENTIST AT MERELLO MARINE CONSULTING

"The largest area of mangroves can be found in the south of Puerto Rico, where we are doing most of our work. Mangroves are critical, not just for Puerto Rico but globally, because they provide shelter for animals and protection from sea level rise and erosion. Planting programs to replace lost mangrove forests are so important for conservation as well as communities that depend on the fishing industry for their livelihoods."

THE NUMBERS

1,445 acres

The area covered by the organization's mangrove restoration project in Jobos Bay is 1,445 acres, making it the largest ever attempted in the United States

Up to 10 years

Even with intervention, mangroves can take up to 10 years to show signs of regeneration and maturation after each major hurricane event

14,000 trees

The current annual capacity of the mangrove nursery at JBNERR is 14,000 trees per year - the largest in Puerto Rico

9%

The power plants near Jobos Bay provide 9% of Puerto Rico's total energy output, which is why storm surge protection for this area is so vital to avoid major power outages during climate events

Above 100 ppt

In areas that have been cut off hydrologically, water salinity is often above 100 ppt, which is beyond the range for mangroves to survive and be healthy (where normal seawater is around 35 ppt)

VISION FOR THE FUTURE

@ 11th Hour Racing

Follow The Ocean Foundation now to find out the latest on their projects and learn more about their work.

Aitza Pabón-Valentín "I'm very grateful for the hugely successful work The Ocean Foundation is doing here. They are creating a legacy to pass on to the next generation of Puerto Ricans, who will continue to fall in love with these islands and nurture and support the ecosystems that make it what it is."

The Ocean Foundation's projects in Puerto Rico continue to diversify, from mangrove forest and seagrass meadow replanting to hydrological rehabilitation.

Due to its overall importance, Jobos Bay continues to be a key focus area for our grantmaking - especially in the highly disturbed Camino del Indio area. The Ocean Foundation is collaborating with the US Army Corps of Engineers and JBNERR to assess the extent of the issues, how best to remove the illegal structures, remove excessive sediment and fill material, restore tidal and water flows and where to reforest in the most damaged parts.

HOW LONG DO MANGROVES TAKE TO GROW?

Mangroves grow at varying rates, with some species taking up to 10 years to reach maturity. Those grown in our grantees' mangrove nurseries usually need at least 12 months before they can be exposed to their natural habitat.

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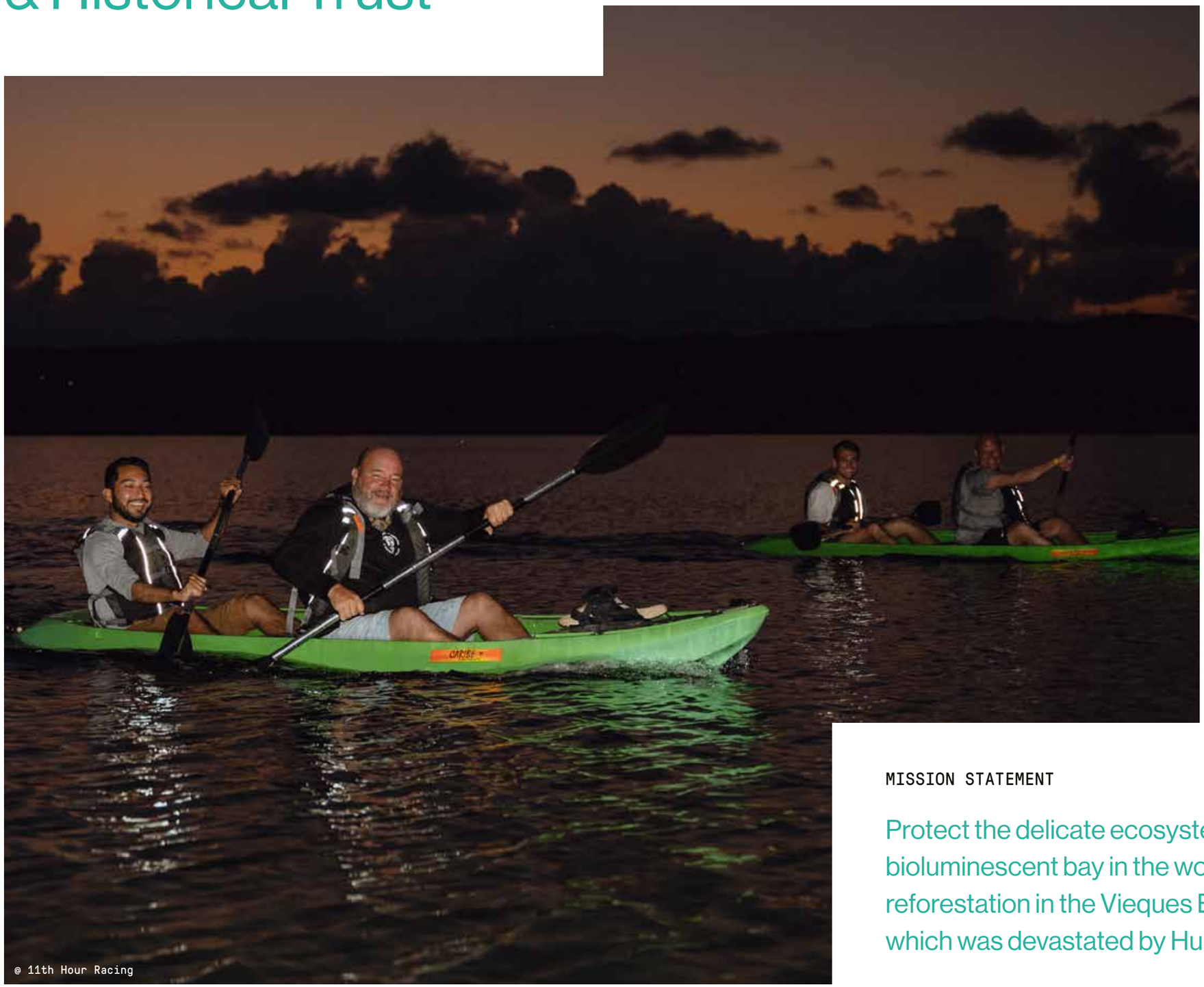
PROTECTING THE ‘DINOS’ OF MOSQUITO BAY

Vieques Conservation & Historical Trust

Population of Vieques
8,000

Mangrove seeds collected
4,000

Dinoflagellates per liter in Mosquito Bay
160,000



@ 11th Hour Racing

Bioluminescent bays are delicate ecosystems that exist in very few places in the world. The small island of Vieques, to the east of Puerto Rico’s main island, boasts one of them - Caño Hondo, or Puerto Mosquito (Mosquito Bay). Not only is it in such a select group, but it’s the brightest of them all, and considered to be one of the last ‘pristine’ bioluminescent bays on earth.

The Vieques Conservation and Historical Trust (VCHT) protects areas of ecological and historic interest on Vieques including the delicate conditions that support this luminescence – created by tiny dinoflagellates (dinos). They produce a bright burst of blue light when they are shaken or come into contact with another organism.

Preservation of this incredible phenomenon is done primarily through the restoration of crucial mangrove forests, which provide protection for the coastlines from storm surges and a rich habitat for birds and other animals.

The primary focus for 11th Hour Racing’s funding has been to help the VCHT replant mangrove forests that have been destroyed by climate events and manage groups of community volunteers alongside a small team of dedicated professionals to preserve one of the world’s rarest ecosystems.

MISSION STATEMENT

Protect the delicate ecosystem that supports the brightest bioluminescent bay in the world, Mosquito Bay, through mangrove reforestation in the Vieques Bioluminescent Bay Nature Reserve, which was devastated by Hurricane Maria in 2017.

CHALLENGE

The growth in tourism and extreme weather events presented a sustainability challenge for Puerto Mosquito, and there was an obvious need to develop a community of conservation and build awareness of the delicate nature of the ecosystem that supports the area's unique bioluminescence

SOLUTION

Recognizing the importance of community engagement, VCHT identified appropriate areas of the bay that could be clearly marked to allow ecotourism operators, school students, volunteers, new team members and the wider community to participate in planting programs, seed collection and debris removal, and to attend on-site educational visits

CHALLENGE

Mangroves replanted from nurseries have a high mortality rate due to the extreme heat conditions and unusual precipitation patterns around Mosquito Bay

SOLUTION

Precipitation and temperature monitoring instruments, which can be deployed at different sites around the bay, are now being used to determine the best locations and times of year for planting. An innovative nursery methodology was also developed to grow red mangroves in different salinity and sunlight conditions, preparing the new plants to adapt to the harsh conditions and hugely increasing their survival rates

CHALLENGE

Many of the mangrove forests that encircle Mosquito Bay were almost destroyed by Hurricane Maria in 2017 and would have taken up to 30 years to recover if left to do so organically – risking the loss of the bioluminescent 'dinos' into the open ocean

SOLUTION

A significant replanting program is restoring these mangroves and strengthening this important natural, economic and cultural phenomenon

CHALLENGE

Increased erosion caused by climate change was resulting in the loss of red and white mangroves that had previously been replanted

SOLUTION

Innovative solutions such as 'living shoreline' techniques are being used, where natural materials instead of manmade structures help stabilize the shoreline at the mouth of the bay. As part of these projects, sandbags, dead mangroves and other natural anchoring materials are used to prevent erosion while nature reproduces and rebuilds its own protections against wave surges

MEET THE TEAM

Mark Martin-Bras

VCHT DIRECTOR OF COMMUNITY RELATIONS & RESEARCH

"11th Hour Racing empowers local people who have the means, the know-how and the desire - but may not have the resources to put it all together. We're establishing something that's sustainable for the future."

Hatuey Connelly

VCHT MANTA PROGRAM TEACHER

"I've lived in Vieques my whole life. I opened my world by going to university in Puerto Rico, then travelling, and everything I learn is to bring back to Vieques and promote science to the younger generations. I'm really passionate about teaching kids and showing them a little bit of my world and how I see things."

Airamzul Cabral

VCHT LEAD RESEARCHER

"Hatuey's example teaches children how important and beautiful things can happen in the place you are from, and that applies to everywhere in the world. We have to protect our planet because we don't have another house. This is the only one we've got and we humans have to understand that."

THE NUMBERS

40 years

In 2025, the VCHT celebrates its 40th anniversary, having been first established in 1985

60k

On average there are around 60,000 microscopic dinoflagellates per liter of water in Mosquito Bay

876k

During exceptional blooms, up to 876,953 dinoflagellates per liter of water have been recorded

90°F

Except in winter, Vieques' daytime temperatures regularly exceed 90°F, limiting working hours and making site work arduous and difficult

8,000

The total population of the entire island of Vieques or, as the locals know it, 'Isla Nena' (Little Girl Island) is just 8,000

4,000

As of early 2024, 4,000 mangrove seeds, propagules and seedlings had been collected from around the bay for more advantageous replanting

VISION FOR THE FUTURE

@ 11th Hour Racing

Follow Vieques Conservation & Historical Trust now to find out the latest on their projects and learn more about their work.

Mark Martin-Bras "It's thanks to 11th Hour Racing, and organizations like them, that see the value in empowering communities like ours to be innovative and protect our environment. Now, if anything like Maria happens again, we don't start from scratch and that's something we can all be proud of."

Vieques is a rural island community that's far greater than the sum of its parts. Thanks to the dedication of a small team, incredible numbers of local people have rallied to protect a unique and mesmerizing natural wonder and, with it, are building a more resilient environment for their future.

By conducting more hydrodynamic modelling, increasing community engagement and widening replanting programs with them, we will build on the incredible impact these committed and proud Puerto Ricans have had on their beloved Mosquito Bay.

HOW MANY TYPES OF MANGROVE ARE THERE?

There are about 80 species of mangroves worldwide. Puerto Rico has three main types: red mangrove (Rhizophora mangle), black mangrove (Avicennia germinans), and white mangrove (Laguncularia racemosa).

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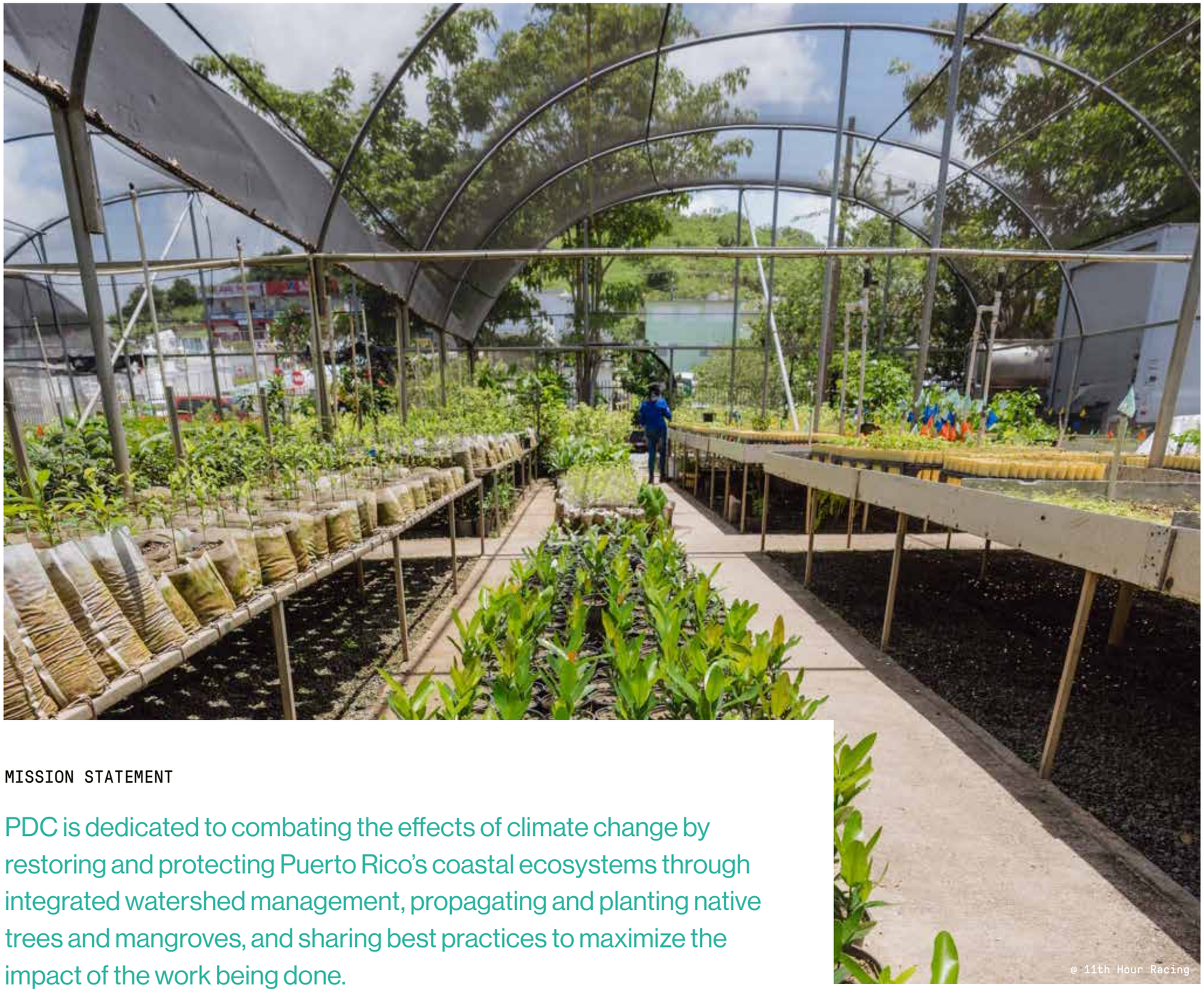
Protectores de Cuencas

Scale of the mangrove nurseries
2,000m²

Size of restoration area
1,269 acres

Native trees planted
1m+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MISSION STATEMENT

PDC is dedicated to combating the effects of climate change by restoring and protecting Puerto Rico's coastal ecosystems through integrated watershed management, propagating and planting native trees and mangroves, and sharing best practices to maximize the impact of the work being done.

Protectores de Cuencas (PDC) is a non-profit, community organization based in Yauco, Puerto Rico. Its mission is to restore and protect ecosystems across the archipelago with an integrated watershed management approach that tackles pollution and erosion using carefully designed and planned programs, especially the replanting of critical coastal mangroves and terrestrial forests.

Since its establishment in 2012, PDC has led the way in knowledge-sharing and best practices around waterways management in Puerto Rico - hosting multiple roundtables with a network of restoration practitioners (including 11th Hour Racing's other grantees).

The geography of Puerto Rico means the entire population lives less than 20 miles from the ocean, while nearly two-thirds of the population are in the territory's 44 coastal municipalities, making the relationship between humans, the water and the environments that intersect them particularly vital for its communities.

PDC uses science and technical expertise, alongside local community engagement, to promote the restoration and protection of native plant species in coastal environments. Its core work includes developing and expanding specialized mangrove nurseries; restoring historic lagoons, wetlands and waterways; and implementing extensive replanting programs using green infrastructure. Many of these projects specifically focus on addressing land-based sources of pollution and erosion through innovative methods including permeable parking lots, bioswales, rain gardens, and hydroseeding.

The aim is to help Puerto Rico's ecosystems become more resilient to future climate events and help nature to help itself.

Norman Maldonado-Benítez, Project Coordinator at Protectores de Cuencas

"One of our biggest motivations is that we are Puerto Ricans working for Puerto Rico."

CHALLENGE

Hurricane Maria (2017), Hurricane Fiona (2022) and Hurricane Ernesto (2024) resulted in the widespread devastation of native Puerto Rican flora

SOLUTION

Beginning with replanting programs, Protectores de Cuencas led recovery efforts from these climate events by propagating and replanting displaced and destroyed native plants, including large areas of mangrove forests

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CHALLENGE

Mangrove forests are crucial to Puerto Rico's coastal resilience because they offer a natural defense against climate change by sequestering large amounts of atmospheric carbon and protecting the coastline from storm surges. However, they face ongoing threats from human activities and an increase in extreme weather events

SOLUTION

To boost the natural regeneration of mangrove habitats, PDC reforests areas by growing mangrove seedlings in specialized nurseries to increase their resilience when grown and replanted. Nurseries expanded as part of the work to reforest Papayo Lagoon will contribute to ongoing replanting programs in nearby areas, including Cabo Rojo

CHALLENGE

Mangrove seedlings grown in nurseries have lower survival rates as they are not properly adapted to the unique challenges of coastal flooding

SOLUTION

Partnering with the Hispanic Federation, PDC has established specialized saltwater nurseries. These conditions help the mangrove seedlings develop structures they need to survive better when replanted, including 'breathing roots' (roots that grow upwards out of the ground), which improves survival rates by up to 90%

CHALLENGE

Papayo Lagoon and the salt flats in the Lajas region were industrial salt production sites for up to 500 years. The resulting high salinity levels at these sites are killing existing mangrove forests and impeding biodiversity

SOLUTION

As part of the Papayo restoration project, PDC has also reopened and dredged an 8-12 foot mangrove channel into Papayo Lagoon and cleared other blocked waterways. This has reconnected the lagoon to the sea, easing the salinity, and the area is already showing signs of accelerated natural recovery

CHALLENGE

Local communities, especially around Cabo Rojo and Papayo Lagoon, require targeted education on restoration efforts in order to generate active stewardship of these ecosystems and help spread the word about the importance of restoration work

SOLUTION

PDC is engaging students from local schools in native tree planting activities, which help to mitigate the devastating effects of wildfires, while conducting community outreach projects to involve the local population as much as possible

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CHALLENGE

A community of around 600 people is based around the coastal lagoon wetland at Papayo. Here, 57% fall under the poverty line and homes are densely populated and unprotected from storm surges as well as high tides due to years of salt production that has diminished coastal ecosystems

SOLUTION

An innovative program to replant 3,500 native tree species, mainly red, white and black mangroves and the threatened legume Libidibia monosperma, uses artificial 'islands' along the coast. This has created a buffer zone for the lagoon system and increased its elevation to improve resilience and stability during tidal flux - protecting habitats and the local community

MEET THE TEAM

Robert Viqueira Ríos

PROJECT MANAGER AND EXECUTIVE DIRECTOR
(IN MEMORIAM, 1976-2025)

Robert was a biologist with more than 14 years of expertise in natural resources management and community-driven restoration. His work, including the Culebra Community Watershed Action Plan, engaged local communities to improve water quality, restore coastal habitats and control sediment and erosion.

A previous recipient of the prestigious Wetland Community Leader prize in the National Wetlands Awards, Robert was widely recognized for his dedication. Upon presenting him with the honor, NOAA Coral Reef Conservation Program Director Jennifer Koss remarked it "could not have gone to a better and more deserving person".

Robert's legacy continues through the lasting impact of his projects and the communities he empowered.

"Mr. Viqueira... devoted his career and life to mobilizing citizens to protect Puerto Rico's wetlands and the marine habitats, like coral reefs, that are connected to them," - NOAA Coral Reef Conservation Program Director Jennifer Koss

Norman Maldonado-Benítez

PROJECT COORDINATOR

A former student of biodiversity at the University of Puerto Rico, Norman takes a hands-on approach to actively managing the reforestation and green infrastructure projects for Protectores de Cuencas.

"The focus has always been on the conservation of our ecosystems, integrating the communities and integrating our people. Our greatest strength as an organization is our connection with the communities. We're from these areas - our members are part of the communities they're working within - and it is very important to always integrate the communities in the conservation. We can do a lot of work, we can do a lot of planting, but if the communities are not integrated and involved the probability of success will disappear."

THE NUMBERS

1m+ trees

To date, PDC's propagation programs have produced more than 1 million native trees

2,000 m^2

The mangrove nurseries managed by PDC in Yauco cover 2,000 sq m

1,249 acres

The 1,249-acre Cabo Rojo Salt Flats - damaged by 500 years of industrial salt extraction - are now being restored as a vital wetland area

15

PDC restoration projects in Puerto Rico cover 15 municipalities, including Lajas, Guánica, Cabo Rojo and Yauco among others

VISION FOR THE FUTURE

Follow Protectores de Cuencas now to find out the latest on their projects and learn more about their work.

Norman Maldonado-Benítez "Our work requires constant monitoring, and funding from organizations like 11th Hour Racing helps us as an organization and as a community to continue doing it.

Not only are we increasing public access to our beaches and our forests in Puerto Rico, we're conserving these very special and truly unique ecosystems that are so vital to our island and, ultimately, the whole world."

Protectores de Cuencas, like our other grantees across the archipelago, is an organization born out of the communities it serves. As Norman says, 'it is Puerto Ricans working for Puerto Rico'.

As well as continuing to enhance coastal protection and regenerate vital ecosystems for both flora and fauna in Puerto Rico, future work will include a joined-up approach that involves the sharing of knowledge, information and resources with other grantees and the wider communities. This will ensure the work conducted now lives on, benefitting the people of Cabo Rojo, Papayo Lagoon and others for years to come by mitigating the impacts of future natural disasters and rejuvenating Puerto Rico's beautiful coasts.

HOW TALL DO MANGROVES GROW?

Mangroves can range from just a few feet in height to over 200 feet in some areas of West Africa. In Puerto Rico they typically grow to a height between 10 and 50 feet.

A COMMITTED LOCAL WORKFORCE FOR PUERTO RICO

BoriCorps (Franklin's Promise Coalition)

Young adult members

300

Field project training completed

500+ hours

Members living under an hour from project sites

100%

@ 11th Hour Racing

Puerto Ricans often proudly refer to themselves as 'Boricua', an old name for the people derived from the indigenous Taínos who inhabited the island for hundreds of years before the Spanish arrived in 1493.

BoriCorps draws its name from that proud history and operates exclusively in Puerto Rico as a subsidiary of the Franklin's Promise Coalition – a collective of conservation corps operating around the Floridian gulf coast and the Caribbean. BoriCorps gives young adults, mostly between 14 and 25 years old, real-life work opportunities within their own local communities.

Manuel Merello, Lead Scientist at Merello Marine Consulting

"The BoriCorps are wonderful. They are very hardworking and enthusiastic about restoring the coastal marine ecosystem."

By recruiting and training members of the communities they serve, and centering on those with a connection to under-resourced populations or with an interest in environmental conservation and community resilience, BoriCorps really does give back. Priority is given to members who grew up or have families in and around the field projects. BoriCorps has provided a portion of the workforce on several other 11th Hour Racing-funded projects, including in Jobos Bay alongside The Ocean Foundation.

The work, predominantly tied to conservation, helps individuals develop leadership skills alongside academic and job training while protecting and improving the environment and their own communities.

MISSION STATEMENT

To invest in future environmental stewards by engaging and training local young people and educating the surrounding community about environmental restoration efforts.

WHY ARE MANGROVES SO IMPORTANT?

Mangroves are incredible at protecting coastlines from erosion and storm surges - a 200-meter border of mangroves can reduce the energy of one wave by 75%.

CHALLENGE

Large workforces are required for the restoration efforts following recent extreme weather events (Hurricane Maria in 2017, Fiona in 2022 and Ernesto in 2024)

SOLUTION

BoriCorps recruits and trains volunteer workers across Puerto Rico who are restoring forests, habitats and hydraulic flows, conducting trail maintenance, and performing coastal cleanups

CHALLENGE

Given the relative poverty levels in Puerto Rico, those living in under-resourced communities cannot afford to do unpaid volunteering roles

SOLUTION

BoriCorps members receive a weekly living allowance, professional qualifications and regular training

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CHALLENGE

Young people in Puerto Rico need opportunities to develop job and life skills

SOLUTION

BoriCorps inductees learn all sorts of transferable skills, from proper workplace behaviors, communication, and teamwork to financial literacy, interview and leadership skills, and support to develop their resumes

CHALLENGE

Many young adults joining BoriCorps come in with little, if any, prior knowledge or training

SOLUTION

Members complete 500+ hours of professionally-led hands-on field project training and earn various academic certifications (emergency response training; First Aid/CPR; workplace safety; Coastal Shoreline Restoration (UF/Master Naturalist/ equivalent); FEMA Community Emergency Response Team (CERT))

CHALLENGE

Many natural hydraulic flows on the Puerto Rican coast have been disrupted by the impact of human activities over hundreds of years and an increase in storm events

SOLUTION

Partnering with fellow 11th Hour Racing grantee The Ocean Foundation, BoriCorps is harvesting, propagating and planting 10,000 mangroves and clearing more than 1000 meters of fish channels to restore them in accordance with local scientific surveys

MEET THE TEAM

Joe Taylor

EXECUTIVE DIRECTOR AT FRANKLIN'S PROMISE COALITION / CO-FOUNDED BORICORPS IN 2021

"If you value environmental restoration and climate resilience, you have to invest in people to make it sustainable. So many of our young people have not been contributing to society because of the barriers they face; but now, not only are they earning sustainable incomes and paying taxes, they're taking care of the land and their community."

Jeanette Taylor

BORICORPS PROJECT DIRECTOR / CO-FOUNDER

"I wanted us to create a Corps that will be for Puerto Rico by folks from Puerto Rico, and we've seen [elsewhere] how transformative that Corps experience is for young people. Most entry-level jobs in Puerto Rico are very competitive and require one or two years' paid field work. The experience we're offering bridges that gap for the young people who want to stay here on the island and helps reduce the serious brain drain here when our young educated folks leave for better opportunities on the mainland."

Nicole Pillot

BORICORPS COMMUNITY OUTREACH COORDINATOR

"When I got to the BoriCorps interview, I realized this wasn't just a job. There would be professional development and the opportunity to support people in the community, which is something I am passionate about. This project also made me realize that I want to work in restoration."

THE NUMBERS

300

To date, the BoriCorps program has employed, trained and provided service opportunities to 300 young adults

500 hrs

Members have completed more than 500 hours of professionally-led, hands-on field project training

100%

100% of BoriCorps members live less than an hour from the primary project sites

WHY ARE MANGROVES SO IMPORTANT?

Mangroves support fisheries by providing nurseries for marine life, store large amounts of carbon, and help maintain water quality by filtering pollutants.

VISION FOR THE FUTURE

@ 11th Hour Racing

Nicole Pillot "We're planting mangroves for the health and protection of the community, so involving them in the process helps them understand what we are doing and makes them feel like they are part of it. Every student who comes here plants a seed in our nursery and keeps that memory in their heart."

In just the four years since it was established, BoriCorps has already become a community asset to make all Puerto Ricans proud - educating young people while helping them build their future. It will continue to draw and nurture talent from the very communities it serves, all while supporting the crucial restoration projects across this beautiful island.

Follow BoriCorps now to find out the latest on their projects and learn more about their work.

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Q&A WITH

Nicole Pillot

Nicole Pillot, 24, is a member of BoriCorps' Jobos Bay National Estuarine Research Reserve team. She grew up and went to school near the reserve and now her work is central to the restoration of the ecosystems in an area decimated by the passages of hurricanes in recent years.

Tell us about growing up in the Jobos Bay area - how has it changed since you were little?

I went to school near the reserve and remember visiting it in summer camps, along with the Forest of Aguirre at both ends of the bay, and they were full of leafy mangroves and birds. I went away to study and when I returned, after the passage of Hurricane Maria, it had changed a lot. It wasn't as leafy and there were fewer birds and wildlife. It was quite a shock to me.

When did you first become aware of mangroves and their significance to ocean health?

I already knew they were important when I was growing up but I learned more about them during my bachelor's degree. Hurricane Maria was a wake-up call for everyone though, because of the damage it caused. It wasn't until I started working as a volunteer in the reserve that I found out even more about mangroves and I could see first hand that they're like gold for Puerto Ricans - they're so important because they're the central part of such enormous ecosystems on our island.

How did you first hear about BoriCorps? What made you want to become involved?

I applied for a job at the Department of Natural Resources in the Bahía de Jobos Reserve but they turned me down due to my lack of experience. However the Reserve's Director, Aitza Pabón, told me about BoriCorps because she thought it might interest me. At that time it was just beginning its work as an organization. I looked into it and was struck by BoriCorps' mission with young people and the opportunity to help improve a marine ecosystem in my local area - so I signed up.

What are your main roles and responsibilities at BoriCorps?

My team and I collect seeds and propagules, open water channels, plant in the nursery, and we help and monitor other projects around the reserve. More recently I've taken on the role of community outreach coordinator for BoriCorps - establishing partnerships with other organizations, conducting school outreach, overseeing our social media accounts and coordinating volunteer-led events.

What's been your biggest challenge in working for BoriCorps?

The main thing for me has been how physical the work is. A lot of the work is done in mud, where your boots get heavy and you can easily lose balance, and when you're transferring mangrove pots to the sites you often have to walk long distances in these difficult conditions. It requires strength and effort, and mental determination to keep going. At the same time, working in a team with other young people has helped me develop skills like tolerance and patience as we show newer and less experienced members how to carry out the work we do.

What has been your most rewarding achievement while working with BoriCorps?

Without a doubt it was when we reached our goal to plant 10,000 mangroves per year - then we managed to plant more than 13,000 mangroves in a little over nine months! No one could believe we'd got there so quickly because it seemed an eternity away when we started. That project and clearing the water channels was amazing - seeing the water come in and out naturally, and watching the birds flocking to the renewed forests brought me to tears. It's an amazing view at night when it's full of water, especially around a full moon, because the mangroves glisten. It's beautiful.

What are the main things you've learned since joining?

It's reaffirmed to me that we all need to take care of our common home. I honestly believe everyone has a role to play in this and we must all unite. As lonely as you might feel, there are many people out there who want to contribute to the same purpose and who support young people and their growth.

Would you encourage others to get involved with BoriCorps?

Definitely, yes. You learn many new things, develop personal and professional skills, and it's a great program while you consider your next step in life. I was struggling because I had no experience. Now, I'd need more than the fingers on both my hands to count the incredible adventures I've had thanks to BoriCorps.

What are your future plans?

I would like to become a full-time member of the BoriCorps team. The experience has helped me decide that I'd also like to study a master's degree and continue in the field of marine biology so I can contribute to my island and the important ecosystems of the world.

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CONCLUSION

A Living Blueprint for Coastal Resilience

Puerto Rico stands as a powerful example of how communities can respond to climate impacts, not only with urgency but with vision. Faced with the increasing intensity of storms and a legacy of ecological damage, the island is embracing a strategy that looks to nature itself for solutions — replanting mangroves, restoring coastal habitats, and rebuilding ecosystems that act as buffers against the next disaster.

This work, however, is not easy. For the organizations leading these efforts, the challenges are real: limited funding, long permitting timelines, bureaucratic hurdles, volunteer burnout, and the emotional weight of returning to storm-damaged landscapes time and time again. Despite these obstacles our grantees persevere — driven by deep local knowledge, community trust, and an unshakable commitment to protecting what matters.

Their efforts go beyond physical restoration. They are training youth and community members, creating job opportunities, reviving traditional ecological knowledge, and cultivating a sense of shared stewardship across generations. This work strengthens the natural defenses of Puerto Rico and the social and cultural fabric that allows communities to withstand and recover from crisis.

These projects offer more than just local solutions — they provide a replicable model for other coastal regions grappling with similar challenges. By rooting resilience in science, community engagement, and a deep respect for place, Puerto Rico is showing what is possible when people and nature work in concert.

This is the kind of climate action that lasts — not imposed from the outside but grown from within. The path ahead will not be easy but with continued investment, collaboration, and leadership from those who know the land and sea best, Puerto Rico is building stronger shores — and a more resilient future — for all.

Now, it's over to you. Get involved and stay up-to-date by...

Sharing this case study with others working in ecosystem restoration and climate resilience so together we can spark new ideas and foster further collaboration.

Signing up to our newsletter to receive regular updates and insights about our programs.

Submitting an application for an 11th Hour Racing grant. The process is open from January to March 2026 and you can find out more about it here.

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