

Caribbean Impact Report 2024













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Together - We Find a Way

Dear Friends and Supporters, we are thrilled to present the Caribbean Impact Report for 2024. Our 2030 Goals are defining our work, and our campaign, One Future: Together We Find a Way, is propelling conservation to new heights in the Caribbean and around the world.

This report contains highlights of our conservation work focusing on **Ocean Management and Protection, Climate Resilience, and Coral Conservation and Restoration**. In each of these themes, you'll see that we are creating the conditions that enable conservation outcomes at national and territorial scales – mobilizing transformative levels of funding for effective management, using cutting edge technology and science to support conservation action, and building capacity to protect, restore, and manage nature for biodiversity and climate outcomes. Here are some previews of what you'll learn more about in this report.

Using satellites and drones and the latest computing technology, our team created new maps that identify the most important places for conservation in the ocean, including the deep sea. Working with partners, we are also developing a regional a regional roadmap for creating a nature-positive future in the Caribbean by 2030. We concluded 2024 with The Bahamas Debt Conversion Project for Marine Conservation, the second sovereign debt refinancing project for a Caribbean island nation after closing the Barbados Blue Bond in 2022. The funds mobilized will help fund the management of nearly 17 million square kilometers of ocean in The Bahamas.

Science and novel financial tools are also addressing climate action in the region. Coastal habitats like mangroves and seagrass meadows in shallow waters store carbon in sediments, and these "blue carbon" ecosystems can have significant economic value in carbon markets and

generate revenue for long-term management and conservation. Our team mapped these habitats in Jamaica using cutting-edge technology and are helping the country develop policies and management practices needed to secure future blue carbon financing. Looking uphill, our team in Puerto Rico is working with stakeholders to identify locations where reforestation could support the island's biodiversity and help to secure water for the future. This "ridge to reef" approach also provides benefits downstream, where coral reefs and coastal habitats depend on clean water.

It's well known that coral reefs are struggling from the effects of a warming world and a warming ocean. Fortunately, our team continues to innovate and scale restoration techniques that tap into corals' adaptive capacity for withstanding warmer temperatures. TNC is working to scale up conservation and restoration of reefs in 8 countries and territories across the Caribbean that contain 90% of all the coral reefs in the region.

We are committed to working on long-term solutions, and our 20-year milestone in The Bahamas is evidence of this and the foundation for the amazing Debt Conversion project this year. Likewise, our Resilient Islands project, done in partnership with the International Red Cross and Red Crescent Society, shows how deep engagement with communities can lead to new ways of thinking about conservation and influence national policy agendas. And our work to bring attention to these stories through national, regional, and global media outlets builds public awareness and invites others to join our efforts.

We hope that you will be inspired by what you read in this report and the impact that we have had together in 2024. With your continued support, we know that **Together – We Find a Way.**

Saludos

Where We Work...

nature to thrive together.



By the Numbers 2024...

121 Hectares of Mangroves

reconnected in National Park Manglares de Bajo Yuna (Dominican Republic).

78 Hectares of Mangroves

restored in The Bahamas.

59,788 Hectares of Ocean Habitat

benefiting from 6 revised management plans for Marine Protected Areas in the Dominican Republic.

170,839 Hectares of Forests

and other habitat benefitting from 2 revised management plans in the Dominican Republic.

15,000 People

in the Dominican Republic benefitting from watershed restoration by the Santo Domingo Water Fund

67,976 Hectares of Mangroves

and Seagrass in Jamaica mapped using drones and Al computing techniques.

113 Park Rangers

trained in Puerto Rico to increase enforcement capacity.

391 People Trained

through the CoralCarib initiative: Cuba – 150; Dominican Republic – 145; and Jamaica – 86

USD \$124,000,000

in new conservation funds mobilized through The Bahamas Debt Conversion for Marine Conservation.

20 Years of TNC

conservation action celebrated in The Bahamas



TNC's 2030 Goals...



Climate Action

Reduce or store 3 gigatons of CO² emissions yearly.



Photo: Jillian Morris/TNC Photo Contest 2021

Healthy Lands Conserve 650 M

hectares of land.



Helping People Benefit 100 million

people.



Local Leaders

Support 45 million local stewards.



Our Ocean

Conserve 10% of oceans (4 billion hectares).



Freshwater

Conserve more than 1M km of rivers and 30M hectares of





Caribbean Outcomes



Our Ocean 106 million hectares of ocean with improved management.



reefs, mangroves and watersheds protected and restored.



Helping People 4.8 million people

supported by naturebased solutions.



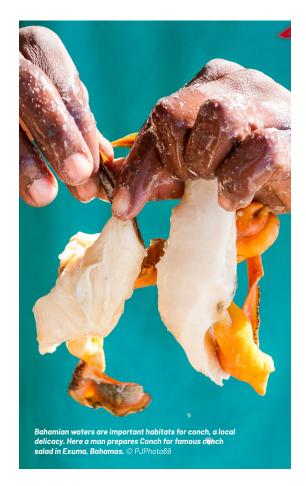




The Bahamas Charts "Bold New Course" with Debt Conversion for Marine Conservation

On November 22, 2024, The Bahamas Government and TNC, in collaboration with partners, announced The Bahamas Debt Conversion Project for Marine Conservation. During the press conference at the launch, Prime Minister the Hon. Philip Davis stated, "Today, we set forth on a bold new course—one that reimagines how nations like ours can finance resilience and conservation."

Developed in collaboration with the Government of The Bahamas, the Inter-American Development Bank (IDB), Builders Vision, AXA XL and Standard Chartered, this innovative project will generate an estimated \$124 million in funding for marine conservation efforts in The Bahamas over the next 15 years. By buying back \$300 million of its external commercial debt using proceeds from a new competitively priced \$300 million loan funded by Standard Chartered. The Bahamas will unlock this funding (plus an additional estimated \$8 million of endowment investment returns) for marine conservation without adding to the country's debt. The conservation fund endowment, expected to grow to \$20 million by 2039, will continue funding marine conservation in The Bahamas beyond the project's 15-year term. This deal will help to



safeguard The Bahamas' vital marine ecosystems and combat climate change while also securing the future of vital marine resources that underpin the nation's economy, livelihoods and cultural heritage.

Noting increasing conservation costs and the advance of climate change, Prime Minister Davis said The Bahamas has chosen innovation rather than despair: "The Bahamas Debt Conversion Project for Marine Conservation is more than a financial transaction; it is a declaration of intent, a testament to what can be achieved when creativity meets determination."

Strong record

The Bahamas has a strong record in marine conservation, with more than 17% of its nearshore environment designated as part of its National Protected Areas System. Marine protected areas (MPAs) within this system comprise nearly 6.8 million hectares (16.8 million acres) of ocean. Like many other small-island, large-ocean states, The Bahamas needs additional resources to effectively manage and enforce its existing MPAs and to balance conservation of its marine resources with increasing demand for and development of its coastal and ocean

Improved Ocean Management

space, as well as to help with addressing climate change impacts on the country and its people. This debt conversion is the most recent of TNC's Nature Bonds projects. Nature Bonds projects are powerful tools that combine debt refinancing, ecological and social science, conservation planning and policy to support countries to achieve their conservation and climate goals, close the nature finance gap and support local communities. The Bahamas Debt Conversion Project for Marine Conservation will enable The Bahamas to advance effective management of its vast system of MPAs by providing the single largest amount of funding to support effective management of the country's ocean area.

"When it comes to addressing the dual crises of the climate emergency and biodiversity loss, there is a funding gap that stifles many countries' ambitions to invest in nature for the benefit of their people," said TNC CEO Jennifer Morris. "The Bahamas has a strong record in conservation and one of the

largest systems of designated marine protected areas in the Caribbean. I am especially excited about this Nature Bonds project, as it will help The Bahamas reach its conservation goals and support sustainable livelihoods. This is further proof that debt conversions, with the right conservation commitments and technical assistance, are an effective market-based solution."

Firsts

The Bahamas debt conversion project is unprecedented in the history of conservation finance in several ways. It is the first time that a private investor, Builders Vision, is providing a co-guarantee alongside a multilateral development bank (MDB). It is also the first time a private insurer, AXA XL, has provided credit insurance alongside an MDB in support of a sustainable issuance for nature and climate. In addition, the project marks the first time that climate-smart MPA commitments are included explicitly in the conservation outcomes to support climate mitigation and adaptation goals.

What it means

"For every dollar saved, for every reef protected, for every mangrove restored, we edge closer to the resilient Bahamas we envision," explained Prime Minister Davis. "For the fishermen who rise before dawn, this project means sustainable waters teeming with life. For families living along our coasts, it means protection from storm surges and rising seas; for our children, it means a chance to inherit a Bahamas where natural beauty is preserved, and economic opportunities abound."

This was the second "nature bond" project carried out with support from TNC's Caribbean Team, following a similar project with the Government of Barbados in 2022. Both projects have provided transformative levels of financing for conservation that help each nation fulfill their national conservation ambitions, contribute meaningfully to TNC's 2030 Goals, and move the world toward the outcomes in the UN Global Biodiversity Framework.



Abundant fish life at Sugar Wreck dive site, Bahamas. © strmko



Sharing Knowledge to Accelerate Marine Spatial Plans in Barbados and Belize

The Barbados-Belize Marine Spatial Planning (MSP) Peer-to-peer Knowledge Exchange, held in Belize from December 2 to 6, 2024, proved a valuable learning experience for both participating nations. This in-person event aimed to strengthen the capacity of the Barbados Marine Spatial Planning Unit (MSPU) by providing insights into Belize's ongoing MSP journey.

The exchange focused on enhancing the understanding of key steps and best practices in MSP governance, including the crucial roles of ministries, agencies, stakeholders and supporting partners. By sharing experiences and challenges faced during their own MSP development process, both teams gained valuable insights into achieving specific conservation targets and milestones.

A key emphasis of the learning exchange was on effective stakeholder engagement, which is crucial for achieving effective conservation and management outcomes. Participants explored how to foster broad support for the resulting spatial plan by effectively engaging people in the design steps, and communicating the benefits of MSP to diverse stakeholders.



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R to L: Safira Vasquez (Belize MSP), Allision Wiggins (Barbados MSP), and Maxine Welsh (TNC) join hosts Courtney Mendez and Brandon Usher on Sunup on 7 to discuss the exchange visit.

Improved Ocean Management

Through interactive sessions, discussions and site visits, participants explored aspects of the MSP process, including:

- Enhanced understanding of MSP governance: Participants gained a deeper understanding of key steps, best practices, and the roles of various stakeholders in the MSP process.
- Insights into achieving conservation targets: The exchange provided valuable insights into overcoming challenges and achieving specific conservation goals outlined in relevant agreements.
- Strengthened stakeholder engagement strategies: Participants explored effective strategies for engaging stakeholders and building broad support for the MSP process.
- Productive collaboration: The event fostered a collaborative environment and demonstrated the value of peerto-peer learning in advancing marine spatial planning.

The exchange provided a valuable platform for the Barbados Marine Spatial Planning Unit to gain practical knowledge and apply lessons learned to the development of their country's MSP and will undoubtedly benefit both Barbados and Belize in their ongoing efforts to develop and implement effective marine spatial plans. Participants appreciated the opportunity to learn from each other, and the exchange reinforced the value of peer-to-peer learning while MSP efforts are underway.



MSP Knowledge Exchange participants pose for a photo during a field trip at the Turneffe Atoll, Belize. © Maxine Welsh/TNC



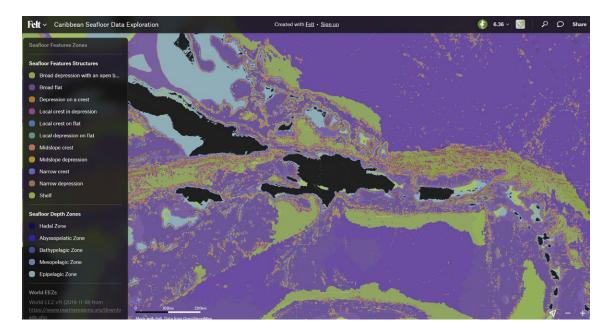
Participants of the Barbados-Belize Marine Spatial Planning knowledge Exchange event in Belize. © Andrea Polanco/TNC



New Deep Ocean Habitat Classification for the Caribbean – New Insights for Conservation in an Unexplored Realm

We know more about the surface of other planets than we do the ocean floor of our own planet. Only five percent of the deep ocean has been explored, and we have only mapped a quarter of the seafloor in detail. Consequently, one of the largest data gaps we have for advancing conservation on a global scale is habitat information for the deep ocean (areas deeper than 30 meters). This is because much of the information we have for the ocean is derived using optical satellites that can record light reflectance off the ocean floor up to 30-meter depth, depending on water clarity. Areas deeper than 30 meters do not reflect sunlight and therefore require different technologies to map.

We know the deep ocean holds an incredible array of biodiversity and expeditions are continually discovering new species; scientists estimate that we have only described ten percent of species that exist in the ocean and estimate there are up to 10 million species in the deep ocean. This unknown trove of biodiversity is threatened by ocean warming, acidification, and deoxygenation, alongside threats like deep-sea fishing, marine debris, pollution and the potential for deep-sea mining, all of which can disrupt delicate ecosystems and harm deep-sea species due to habitat destruction and disturbance.



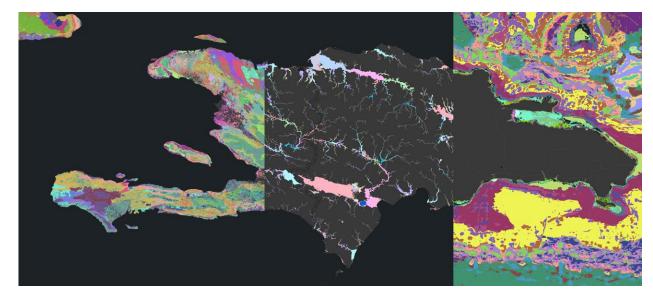
TNC's Caribbean Science team conducted an analysis using a Geographic Information System (GIS)-based method to model and map deep ocean habitats based on the highest resolution bathymetric model available (1 square kilometer).

Improved Ocean Management

To address this critical data gap on deep ocean habitats, TNC's Caribbean Science team conducted an analysis using a Geographic Information System (GIS)-based method to model and map deep ocean habitats based on the highest resolution bathymetric model available (1 square kilometer). GIS allows us to manage, analyze and visualize geographic data into grid-based datasets, which we then further analyze using statistics to describe the seafloor.

The Approach

Much of the deep seafloor data we have today was generated using satellite altimetry, which measures changes in sea surface height using radar and laser technology. Sea surface height, over large scales, is related to gravitational pull from the seafloor below mountains have higher gravitational pull and depress the ocean by small (but measurable) amounts, while canyons and deeper areas have less gravitational pull. The ocean over those areas are slightly (but measurably) higher. Using these kinds of data, our team's technique provides high-resolution bathymetry (depth), from which a wide variety of map derivatives can be produced. We computed new data layers using depth to classify seafloor slope, aspect (the geographic direction the seafloor is facing), relative position, and surface ruggedness. The derived slope, depth, and relative position layers were used to further classify the seafloor into geomorphic zones, such as seamounts, ridges, canyons, valleys, trenches and plains.



GIS allows us to manage, analyze and visualize geographic data into grid-based datasets, which we then further analyze using statistics to describe the seafloor.

Why this is important

These attributes are not only useful for characterizing the seafloor but can also act as proxies for ecological insights. For example, slope influences sediment stability, which impacts an organism's ability to live in or on the sediment. Slope and aspect influence the direction and speed of local currents, which carry nutrients and impact species exposure. Terrain variability, or ruggedness, can help identify seafloor structures, and studies suggest a positive correlation between biodiversity and terrain variability. The team used broad and fine-scale measures to identify expansive features such as a seafloor ridge or plain, as well as smaller features, such as localized depressions on a seamount slope. Hundreds of unique deep ocean habitat types were mapped, and these data are now being used to inform and identify important potentially high-biodiversity areas where marine protection can be expanded across Exclusive Economic Zones.

Even in areas that are difficult for people to access, biodiversity exists and can be at risk if proactive steps are not taken to protect that habitats that sustain diverse forms of life. This analysis makes it possible for nations across the Caribbean to better predict where they have deep-sea resources and biodiversity that would benefit from increased management focus and protection.



Roadmap to Securing a Nature-Positive Future for the Caribbean by 2030

The Caribbean Sea is incredibly interconnected. Fish, whales, turtles, and even tiny coral larvae routinely traverse long distances, ignoring national boundaries to connect marine populations and habitats across an oceanic area roughly the size of the continental U.S. It makes sense, then, that conservation action must also span boundaries and be carried out with ecological connectivity in mind.

To make the most effective conservation decisions, it is important to plan and manage across multiple scales. While many countries have excelled at assessing national-scale gaps in their conservation agendas, national-scale plans can miss regional-scale features and underestimate the importance of ecological connectivity that keeps populations and ecosystems like coral reefs intact and functioning. In essence, national-scale plans are not enough - we must examine the region as a whole or we will miss opportunities to protect the interconnectedness that is vital for the overall health of the system.

TNC's Caribbean Science Team is committed to guiding strategic expansion of protection measures and securing a nature-positive future for the Caribbean by 2030. In late



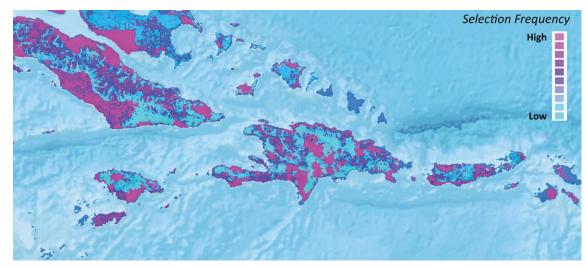
TNC's Caribbean Science Team is committed to guiding strategic expansion of protection measures and securing a nature-positive future for the Caribbean by 2030.

Improved Ocean Management

2024, the team used sophisticated conservation planning software to create a regional portfolio of priority conservation sites across twenty-one countries and territories in the Caribbean. The team has utilized a wealth of spatial information and predictive models that describe ecological features and benefits to create this portfolio, based on seven distinct conservation scenarios that were created and vetted with regional partners. The conservation scenarios not only consider the full representation of biodiversity in the region, but also rare and threatened habitats, benefits to people, maximizing ecological connectivity and planning for climate change. New models on marine connectivity, coral refugia sites, and ecosystem services such as coastal protection, recreation and tourism, blue carbon and fisheries production provide insight into critical areas that contribute to the well-being of people.

What it means

Over the past year, we have been collaborating with dozens of organizations to create a science-based regional-scale roadmap for identifying important terrestrial, freshwater and marine locations where protection, restoration and other effective conservation measures are needed to create a more sustainable future for nature and people. To ensure our regional analysis has national application, national summaries are being created and provided to individual countries for consideration as they prepare National Biodiversity Strategies and Action Plans called for in the Global Biodiversity Framework. This national-level engagement around the regional roadmap data is intended to support collective action conservation action and attract conservation funding at scales necessary to achieve a nature-positive future in the Caribbean.



TNC Caribbean Science Team recently completed a science-based regional biodiversity prioritization of the Caribbean that identifies critical terrestrial, freshwater, and marine habitats to consider for meeting the Global 30x30 Biodiversity Goals. This decision-support tool is providing guidance for countries and territories across the Caribbean as they prepare their national biodiversity plans. CaribbeanRoadMap.tnc.org. Photo: TNC Caribbean Science



The boardwalk at Bonefish Pond National Park in Nassau, The Bahamas. Bonefish Pond protects 1,235 acres of important coastal wetlands, is home to a rich diversity of birds and is a nursery for many marine species. © Shane Gross



Zoning Plans Developed for Five National Parks in The Bahamas

TNC Caribbean Science Team, together with the TNC Bahamas Team and The Bahamas National Trust (BNT), have drafted zoning plans to improve the management of five Bahamas national parks: Moriah Harbour Cay National Park, Exuma Cays Land and Sea Park, Westside National Park, Lucayan National Park and Bonefish Pond National Park. The zones are designed to support management approaches that reduce visitor impacts to sensitive habitats, resolve conflicts between user groups, mitigate threats to biodiversity and improve clarity of the parks' rules and regulations. The parks have been zoned into four categories-'Critical Habitat', 'Sensitive Resource', 'Conservation', and 'Wilderness' zones-these zones have standardized definitions across all BNT parks, but specific rules and regulations may be tailored for each park.



A new marine zoning plan for Bonefish Pond National Park in New Providence, The Bahamas. TNC worked with stake holders to create new zoning plans for five National Parks in The Bahamas, identifying key activities and designing plans to minimize conflict and promote biodiversity and conservation.

Photo: TNC Caribbean Science

Improved Ocean Management

"Critical habitat" areas are entirely off limits to park users, while "sensitive resource" areas can be used for tourism and recreation only if users agree to observe sensitive resource protocols to safely interact with these habitats. "Conservation' zones contain some infrastructure for activities such as camping and picnics, and may be developed further in the future, while "Wilderness" zones are more untouched areas of the park that can be used for recreation while observing leave-no-trace principles. Additionally, boating speed limits and no wake zones have been defined in specific areas of the parks.

These draft zoning plans were informed by extensive consultations with park users and local communities, a fieldwork campaign for collection of drone imagery and underwater footage of critical habitats, and several rounds of feedback from BNT's park managers. Plans will be completed after a final round of stakeholder validation meetings in Spring 2025. BNT will implement the zoning plans and use them to guide the development of climate-smart park management plans.

In addition to the zoning plans, the team also developed high-resolution mangrove and benthic habitat maps for each park, leveraging our Planet partnership. These maps can be used as a baseline to inform monitoring and evaluation of park management actions over time. The data has been made publicly available through our Caribbean Science Atlas (https://caribbeanscienceatlas.tnc.org/) and will also be featured on The Bahamas Spatial Biodiversity Information System (SBIS). The SBIS, simultaneously being developed by NatureServe for the Bahamian Government, will also feature several of the Science Team's datasets and habitat protection statistics for The Bahamas.



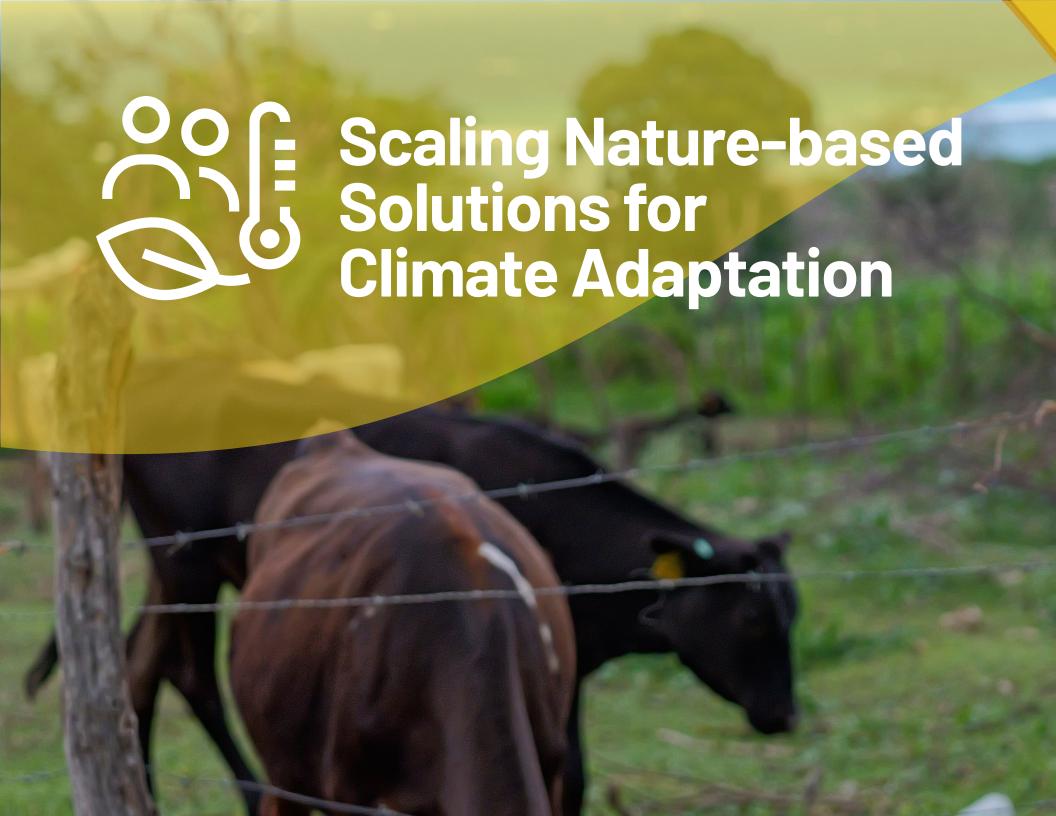
Bahamas Long Island Dean's Blue Hole. © Enrico Pescantini



Beautiful aerial view of famous Chat'n'Chill Conch bar on Stocking Island, Exuma, The Bahamas. © mr-fox



Sting ray in clear turquoise waters at Sandy bottom beach and blue cloudy sky at Stainel Cay, Exuma Island, Bahamas. © mr-fox







Mangrove Restoration Expands in The Bahamas

This year, TNC collaborated with partners to expand mangrove restoration efforts on the Hurricane Dorian-impacted islands of Abaco and Grand Bahama, increasing both the restoration area and the number of mangroves replanted. At the end of 2024, with funding and technical support from TNC, our partners at The Bahamas Mangrove Alliance had 78 hectares under restoration (up from 68 hectares in 2023) and planted 63,543 additional mangroves, bringing the total to 198,936.

Our restoration partners have been utilizing modern technology including multispectral drone imagery to track planting activities and measure ecosystem recovery. The team has developed a shared database and geospatial information system to track restoration activities and important information such as mangrove propagule origins and dispersal locations. Baseline carbon stock assessments have been collected for sites on both islands and are under final quality review.



Northern Bahamas Mangrove Restoration Project partners plant red mangrove seedlings in Dover Sound, Grand Bahama as a part of a collaborative effort to restore Hurricane damaged areas on the island. Photo: Jewel Beneby



TNC and our restoration partners utilize modern technology in the form of multispectral drone imagery to track mangrove planting activities and analyze ecosystem recovery in Grand Bahamas. Photo: Valerie McNulty/TNC

Scaling Nature-based Solutions for Climate Adaptation

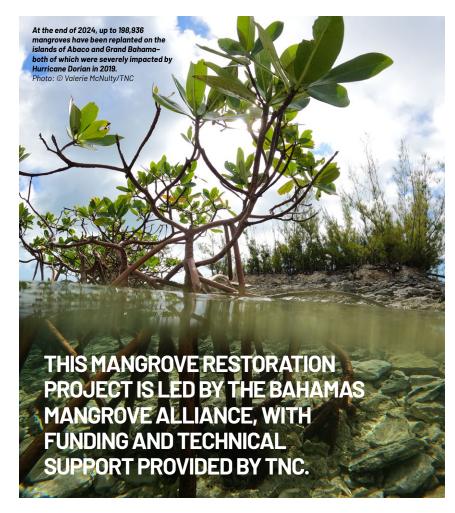


The bright green leaves of newly planted Red Mangrove seedlings contrast the dark mangled remains of mangroves destroyed by Hurricane Dorian on the island of Gran Bahama. These seedlings represent hope for the restoration of this critical ecosystem. Photo: © Valerie McNultry/TNC

In October 2024, TNC hosted a workshop titled "Policy and Sustainable Financing for Mangrove Restoration" to engage with the government's Climate Change & Environmental Advisory Unit, strategic project partners and other governmental agencies. The workshop brought together local and regional representatives to discuss sustainable finance options to support national mangrove restoration and monitoring needs and priorities. It also served as a learning exchange between TNC blue carbon projects in Virginia, U.S., Mexico, Jamaica and The Bahamas.

In November, the Third Annual Northern Bahamas Mangrove Restoration workshop took place in Freeport, Grand Bahama. Partners reported on successes and setbacks in restoration, monitoring and financing the project. During the workshop, the communications and community involvement working group completed a capacity and communications assessment and are continuing to develop a stakeholder list to enhance community engagement. Participants discussed potential funding sources, as well as engagement strategies to address project needs with policymakers.

To raise awareness of this important work, the team produced two short videos showcasing this long-term, collaborative effort to restore ecosystem function of more than 10,000 hectares of damaged or degraded mangroves, which stabilize coastlines and support livelihoods of local communities.









Community involvement in Mangrove restoration





National Mangrove Inventory: Integrating Coastal Wetlands into Jamaica's NDC

TNC and partners are working to support the Jamaican government in updating and submitting its Nationally Determined Contribution (NDC) as the country prepares for the 30th Conference of Parties for the global climate convention enshrined in the Paris Agreement. As a signatory to the United Nations Framework Convention on Climate Change, Jamaica is required to submit ambitious targets, and update these on a regular basis. "Integrating coastal wetlands into Jamaica's NDC," a project funded by the Pew Charitable Trusts, is providing new data and facilitating the integration of conservation and restoration targets for mangroves and seagrass ecosystems – aka, "blue carbon" habitats - into Jamaica's NDC and national policies.

A collaborative "One Conservancy" effort implemented by TNC's Jamaica team, with technical support from the Caribbean science and Global Climate and Policy teams, the project used drones and AI software to map and quantify the area of mangrove forests and seagrass beds. Fieldwork conducted in June and August 2024 provided new data needed to update and refine the existing mangrove habitat maps and create a new seagrass habitat map for the country. These combined maps show the spatial extent of both ecosystems around Jamaica's mainland: 11,978 hectares of mangroves and 55, 678 hectares of seagrass.



The maps are supplemented by estimates of sequestered carbon through an analysis by the Centre for Marine Sciences at the University of the West Indies (UWI) Mona Campus in a parallel project to quantify the amount of carbon being sequestered by Jamaica's seagrass beds and mangrove forests.

The habitat maps and estimates of sequestered carbon support two major national efforts. First, they will be useful for updating the country's NDC and help Jamaica put forward science-based NDC targets for coastal ecosystems. Second, they will provide an updated status of the extent of blue carbon habitats that can have significant economic value in the carbon markets and shape planning and sustainable development decisions.

Implementing this project requires a careful and deeply collaborative approach. TNC's team conducted two field campaigns in priority mangrove and seagrass sites that were identified through an expert stakeholder consultation workshop in April 2024. Stakeholders familiar with each site participated in the field

Scaling Nature-based Solutions for Climate Adaptation



The community lives and thrives among the mangrove ecosystem in Old Harbour Bay, Jamaica. © Steve Schill/TNC



Habitat mapping in Old Harbour Bay, Jamaica. © Valerie McNulty/TNC



Old Harbour Bay, Jamaica. © Steve Schill/TNC

assessments, serving as expert guides or boat captains to help guide the team's fieldwork. The coastline was divided into 13 zones, and using drones, the team collected imagery at mangrove sites that include plots used by UWI to calculate carbon sequestration. Seagrasses were also mapped with drones, with extra information about depth, and substrate type: sand, rock, silt, coral, hard pavement, and overall density of seagrass verified with field samples. The collected data was used to "train" an image classification algorithm to identify seagrass and other benthic habitat types.

In addition to the scientific products, the project includes a policy component involving a review of existing policies and legislation with recommendations for strengthening the legislative framework to support monitoring, reporting and verification of NDC targets and, perhaps one day soon, a framework allowing for carbon credits to finance the protection and management of these critical coastal ecosystems.



Ridge to Reef Approach to Conservation in Puerto Rico – A Tale of Two Watersheds

The Nature Conservancy has long taken a "Ridge to Reef" approach - "Del Monte al Mar" - to conservation in Puerto Rico. Recognizing that the health of coastal ecosystems like coral reefs and seagrass beds depends on well-managed lands and freshwater systems uphill, this is a holistic approach that integrates conservation around freshwater systems starting from their source in the mountains to where they empty into the ocean. Ridge to Reef efforts in Puerto Rico were concentrated on two watersheds in 2024: Guánica Bay in southwestern Puerto Rico, and Río Guayanés on the southeastern coast.

Guánica Bay is a priority watershed for the U.S. Coral Reef Task Force (USCRTF), led by NOAA's Coral Reef Conservation Program. After more than a decade of work in the implementation of the Guánica Bay's Watershed Management Plan, the USCRTF moved this watershed to a "graduation" process that includes the development of a governance structure that will provide continuity to existing management efforts. The Guánica Bay Watershed Local Coordinator is Protectores de Cuencas, Inc., a TNC partner organization, which developed the Watershed



Species planted along a sand dune to control its erosion at Tamarindo Beach,
Guanica Dry Forest. Photo: Tania Metz/TNC

Management Plan and helps to implement it. In April 2024, Protectores de Cuencas completed a reforestation project to reduce erosion and sedimentation at Tamarindo Beach in the Guánica Dry Forest. With support from TNC and others, more than 3,000 trees, including the threatened Cóbana Negra (Stahlia monosperma), were planted to restore three acres of this essential forest habitat.

In 2024, TNC initiated a watershed replenishment project in the Rio Guayanés watershed, located in the municipality of Yabucoa. This watershed includes one of the main agricultural valleys in Puerto Rico. It has a catchment area of 39.2 km² with an annual rainfall of around 69 inches. More than 25,000 people live in the watershed and depend on the freshwater and other natural resources found there. This watershed is also the habitat of valuable species such as the Puerto Rican rock frog or Coquí Guajón (Eleutherodactylus cooki) and Richmond's coqui or Coquí Caoba (Eleutherodactylus richmondi). These species are endemic to Puerto Rico and the Coquí Guajón is considered threatened under the Endangered Species Act.

Scaling Nature-based Solutions for Climate Adaptation

The work in the Rio Guayanés watershed thus far includes stakeholder identification and engagement, spatial analysis of land use and modeling of watershed function. This watershed replenishment project is funded by Microsoft and TNC has identified and consulted with key stakeholders, including the Municipality of Yabucoa, Puerto Rico Department of Natural and Environmental Resources (DNER), federal agencies, such as the U.S. Fish and Wildlife Services (USFWS), the Natural Resources Conservation Services (NRCS), and the Soil and Water Conservation District for Eastern Puerto Rico. Stakeholder consultations focused on gathering community feedback and a participatory mapping exercise, where local community members identified strengths and challenges to management of land and freshwater in their watershed.



From left to right, Roberto Viqueira from Protectores de Cuencas, Inc., Francisco Nunez from TNC Caribbean, and Darien Lopez from PR Department of Natural and Environmental Resources observe the area reforested in the Guánica State Forest. Photo: Tania Metz/TNC



NRCS District Conservationist Esteban Padilla presents to the community about NRCS efforts in this watershed. Photo: Christina Colondres





Water Funds: Using Nature to Secure a Vital Resource for the Dominican Republic

Water funds are an innovative financial mechanism designed to preserve and restore watershed ecosystems and biodiversity to ensure a sustainable supply of clean water for communities and ecosystems. Water funds direct money from downstream users of water, like beverage companies, to targeted conservation activities upstream to provide clean drinking water. In the Dominican Republic, TNC helped to establish two funds in a collaborative effort between government agencies, non-governmental organizations, academia, private sector partners and local communities.

Founded in 2015, the Santo Domingo (SDWF) and Yaque del Norte (YNWF) Water Funds play a crucial role in addressing water scarcity and water quality challenges for downstream water users, and help to raise awareness more broadly about environmental stewardship and conservation. They also emphasize and reinforce direct community involvement - local communities are engaged in decision-making processes and benefit from capacity-building programs that enhance their ability to adapt to climate change through the management of water resources.



Water Funds emerged as a local response to the challenge of water security and works to protect water sources for community members. © Ricardo Briones/TNC

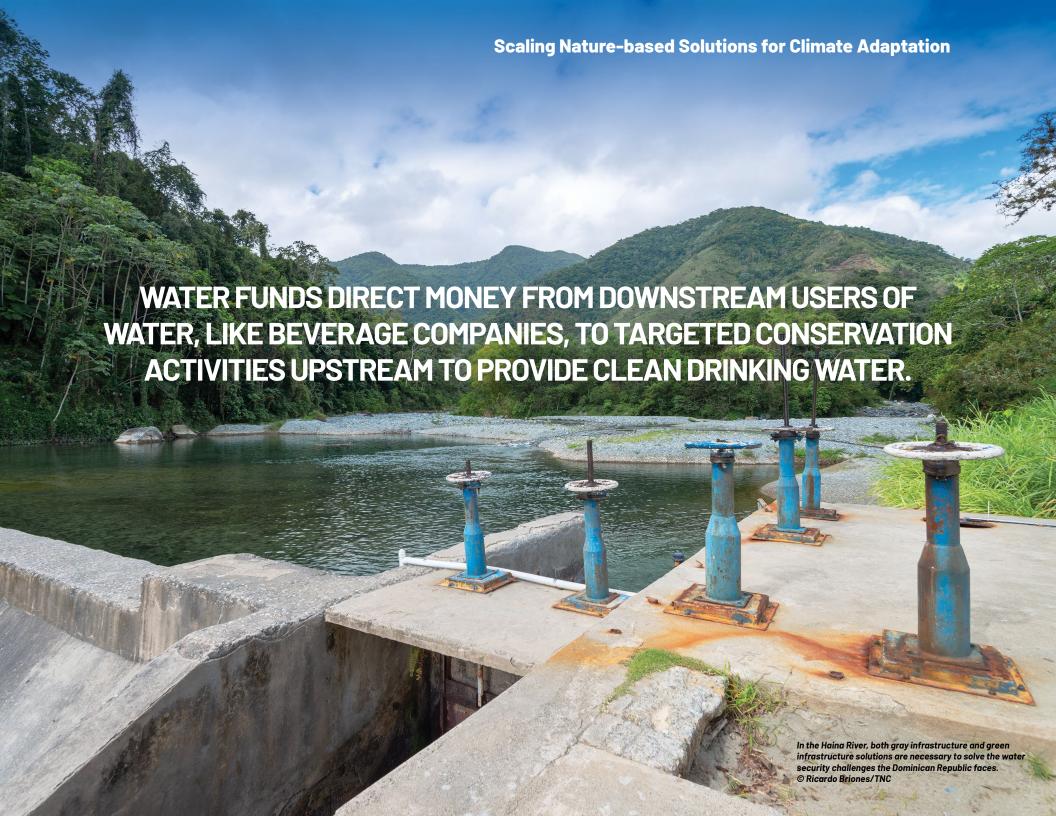
Each fund is tailored to the specific needs and conditions of the watershed and community. Wastewater treatment plants deployed throughout different watersheds are treating roughly 300,000 $\,$ m³/year benefiting around 9,000 persons.

Additionally, as of October 2024, YNWF has enhanced 2,745 hectares (6,783 acres) of watershed habitat, while the SDWF enhanced another 1,231 ha (3,042 acres) for a total of 3,976 ha (9,825 acres) of habitat restored, with over two million trees planted.

Given the clear impact of these water funds to propel habitat restoration, IDB Lab, the innovation and venture capital arm of the Inter-American Development Bank, has entered into an agreement with both funds to assess the feasibility of developing a voluntary biodiversity credit market in the country, the first of its kind.

Why does this matter?

Water funds in the Dominican Republic are vital for safeguarding the country's water resources. By fostering collaboration and investing in sustainable practices, these funds contribute to the long-term health and resilience of both the environment and the communities that depend on it. They also help to reverse the loss of biodiversity and enhance the update and storage, addressing the world's twin crises of biodiversity loss and climate change. That is a win for both people and nature.









Advancing Coral Restoration across the Caribbean

Launched in April 2023, CoralCarib is leading transformative coral restoration efforts in Jamaica, the Dominican Republic, Cuba, and Haiti, and addressing the urgent need to protect and restore the region's coral reefs. TNC is helping to build coral conservation and restoration facilities that serve as focal points for groundbreaking research and restoration using cutting-edge technology and collaboration with local communities.

In the Dominican Republic, the Coral Innovation Hub is jointly hosted by Fundación Grupo Puntacana (FGPC) and Fundación Dominicana de Estudios Marinos (FUNDEMAR). Together, these organizations have produced over 3,122 coral fragments from six species in terrestrial nurseries and maintain 40 marine nursery structures focused on critically endangered staghorn coral. New facilities are under construction and will further enhance coral research and restoration capacity through methods such as AI-powered tools, including automated systems for planting coral and analyzing large amounts of field data to identify resilient corals to incorporate into restoration activities.



Fundemar, CoralCarib's implementing partner in Bayahibe, DR, works alongside youth to install a new coral restoration lab. © Ricardo Briones/TNC



Andreina Rivera, Coral Sciences Coordinator from Fundacion Grupo Punta Cana, CoralCarib's implementing partner in Dominican Republic, monitors the health of coral in the terrestrial coral nursery using Al technology.

© R

In Cuba, CoralCarib is launching a new coral restoration lab at the Acuario Nacional de Cuba in Havana. This facility will strengthen Cuba's role in regional conservation efforts, fostering knowledge-sharing and innovative opportunities for local partners and communities while utilizing sexual reproduction techniques to restore coral populations.

In Jamaica, Alligator Head Foundation's upgraded facilities focus on refining coral propagation and outplanting techniques, and empowering locals and partners to implement scalable restoration solutions inside a co-managed marine sanctuary.

Getting to scale

Across all sites, CoralCarib aims to create millions of coral fragments, restoring ecosystems that support marine biodiversity and sustain coastal livelihoods. Restored reefs not only recover species richness but also bring hope to the people that depend on them. Together with local communities, the CoralCarib project is scaling up efforts to build a healthier, more resilient Caribbean for people and nature.

Across all sites, CoralCarib aims to create millions of coral fragments, restoring ecosystems that support marine biodiversity and sustain coastal livelihoods.





USVI Coral Hub Integrating Resilience to Fight Bleaching

Our U.S. Virgin Islands Coral Innovation Hub is conducting reef restoration work over a large area of reef habitat within marine protected areas around St. Croix, including the East End Marine Park and Buck Island Reef National Monument. Over the past year, our team outplanted more than 8,500 coral fragments at our restoration sites, as well as 1,500 settlement substrates (star-shaped manufactured substrates on which coral settlers grow) containing

one-year-old coral settlers produced through facilitated sexual reproduction at the Hub. While we have made great strides in scaling our restoration work since the Hub's official grand opening in 2022, the Caribbean was impacted by two consecutive marine heat waves in 2023 and 2024 that caused widespread coral bleaching. We are still working to understand the full impact of these events on local reefs, but we do know that the increase in climate-

change-induced impacts only highlights the critical need for immediate interventions that improve coral survivorship and cover. The Hub is rising to this challenge by working to integrate resilience—the ability of corals to survive climate impacts like bleaching—into our coral propagation. Hub scientists are working on innovative means to identify resilient corals and incorporate these lineages into our restoration work to increase coral resilience and survivorship.

Over the past year, our team outplanted more than 8,500 coral fragments at our restoration sites, as well as 1,500 settlement containing new coral babies.



One-month old coral out plant on a reef in St. Croix, Virgin Islands. © Lisa Terry/TNC



Buck Island Reef National Monument, US Virgin Islands. © Marjo Aho/TNC





TNC is helping Corals cope with Hurricanes and Heatwaves

Coral reefs are ancient ecosystems that have expanded and prospered across tropical oceans over thousands of years. Reefs have evolved under the pressure of countless disturbances, showing a remarkable capacity to recover from destructive forces such as hurricanes—an ecological property called resilience. In fact, some species of corals are remarkably well adapted to such disturbances, with the ability to attach and grow in new places when dislodged in a storm. Other types of disturbance, such as the recent marine heat waves that have enveloped the Caribbean for the past two years, pose a greater challenge.

Coral reefs are built by tiny, delicate, sessile invertebrates that grow in colonies – different species take different forms and, collectively, reefs are like a city filled with buildings with a range of sizes and architectural features that serve different purposes. Individual corals serve as the habitat of millions of algae called zooxanthellae, which form a photosymbiotic relationship with the coral itself, providing extra nutrition in clear, nutrient-limited tropical waters. This is the secret to coral's evolutionary success and supporting the creation of vast expanses of reef habitat in tropical oceans.

CORAL BLEACHING

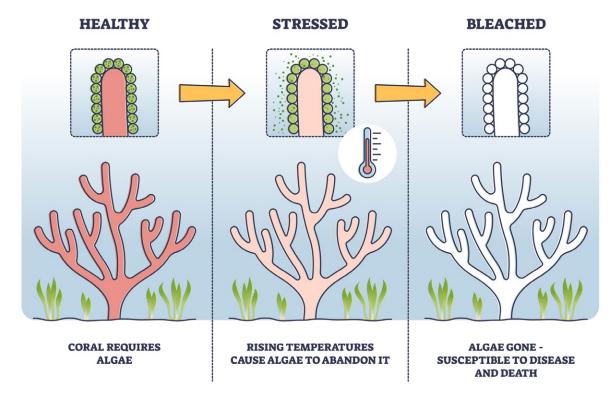


Illustration © VectorMine

But this symbiotic relationship comes with a huge price, as it only works well within a relatively narrow temperature range - changes in that temperature range can be catastrophic for corals. Tropical corals and their embedded zooxanthelleae prosper between 22 and 27 degrees Celsius. Any higher, and the symbiosis is broken, with the algae being expelled from the corals, leading to a condition called bleaching (the algae give the corals their color – without the algae, the corals are transparent and the white calcium skeleton they secret is what is visible.)

Due to climate change, oceans are rapidly warming, putting coral survival in peril. Particularly catastrophic are mass coral bleaching events (MCBEs), prolonged periods of intense heating that lead to widespread coral mortality. To date, there have been four MCBEs, with the most recent in 2023 and extending into 2024. In the Caribbean, temperatures exceeding all previous records caused corals to bleach for more than eight months. Scientists and restoration practitioners recorded massive mortalities across the Caribbean with unprecedented loss of major coral reef builders. In 2024, Hurricane Beryl impacted reefs in the Yucatan Peninsula, the US and Caribbean countries. Despite its record-breaking force, this Category 5 hurricane was not nearly as destructive as the bleaching caused by the 2023-24 heating and resultant bleaching.

Hope for Reefs

So, is all hope lost? Our conservation programs and our partners' conservation programs suggest not. Monitoring of our restoration work is starting to reveal what we have long suspected – that there are climate-resilient corals and climate-resilient areas that provide hope. Our teams target corals that have shown this resilience for use in our restoration programs, and corals spawned and transplanted as young corals in 2023 showed far greater survival than average. These results are published in peer-reviewed research journals so that others can learn and improve restoration and management techniques.



Healthy coral reefs, like this one off the coast of Bonaire, are full of vibrant colours. © johnadersonphoto





TNC a "Driving Force" in The Bahamas Conservation for 20 Years

The Nature Conservancy commemorated 20 years of work in The Bahamas with a celebration on March 15th, 2024, themed "Celebrating 20 Years of Conservation, Collaboration and Community."

The celebratory event brought together local partners, key stakeholders, former and current TNC staff and government agencies. Minister of the Environment and Natural Resources, the Honorable Vaughn Miller, congratulated TNC on its presence in The Bahamas and remarked, "TNC has been a driving force in our country, and has been integral in expanding and effectively managing the Bahamas National Protected Areas System, advancing sustainable fisheries management policy and practice, restoring and conserving coral reef ecosystems, and most recently promoting nature-based solutions for climate change adaptation and mitigation."



L to R: Earl Deveaux, Former Minister of the Environment; Eleanor Garraway-Phillips, Former Director of TNC in The Bahamas; Shenique Albury-Smith, Deputy Director, TNC Caribbean Division; Hon. Vaughn Miller, Minister for The Environment and Nature; Hon. Zane Lightbourne, Minister of State for the Environment; Marcia Musgrove, Director of TNC in The Bahamas and Dr Rob Brumbaugh, Executive Director, TNC Caribbean. © Azaleta & Co

Echoing the sentiments of Minister Miller, Dr. Rob Brumbaugh, Executive Director of TNC's Caribbean Division, described The Bahamas as a unique and marvelous place where TNC has been fortunate to assist in advancing the country's conservation agenda. He noted that TNC's Bahamas Program has been led by three amazing Bahamian women leaders who have scaled our conservation and shown that collaboration across stakeholder groups, from individual fishers to the nation's leaders, is what makes conservation successful.

Marcia Musgrove, Director for the Northern Caribbean Program in The Bahamas, spoke about some of TNC's major accomplishments, which she attributes to the strong work ethic of staff and collaborative spirit among partners and local communities.

TNC's accomplishments highlighted at the event included:

- Serving as coordinator for the Bahamas Spiny Lobster Fishery
 Improvement Project, which led to the first international
 sustainable seafood certification in the Caribbean region and
 helped the country to maintain its seafood export market share.
- Collaborating with regional governments and partners to launch the Caribbean Challenge Initiative, which supported the expansion of the Bahamas Protected Areas Network to help The Bahamas meet its 20% nearshore marine area protection goal.
- Helping to establish the Caribbean Biodiversity Fund and a regional network of national conservation trust funds, including the Bahamas Protected Areas Fund in 2014, which provides sustainable financing for protected areas management, climate change adaptation and biodiversity conservation in perpetuity.
- Facilitating local and international training for hundreds of national and community-based stakeholders and partners.
- And to top off a year of celebration, TNC Bahamas and Global
 FishPath team was the first recipient of the 'Fisheries Supporter
 of the Year Award' given by the Ministry of Agriculture & Marine
 Resources at its Inaugural Anchor Awards in November 2024.



The Northern Caribbean Team. © Charlene Carey/TNC



Marcia Musgrove, Northen Caribbean Program Director and Felicity Burrows, Senior Fisheries Specialist pose with the Anchor Award

"Tech for Nature" Friend-raiser

The Nature Conservancy's Caribbean Board held a "friend-raising" reception with the theme "Tech for Nature", in conjunction with their final in-person meeting of the year. Board members invited people from their professional networks, included entrepreneurs, investors, government officials and media influencers. In all, more than two dozen guests gathered for this event at Bachour Restaurant in Coral Gables, Florida, for the chance to enjoy delicious fare, mingle, and learn about TNC. Some were long-time supporters of TNC, and for others the event was their first introduction to The Nature Conservancy.

Shenique Smith, Deputy Director of the Caribbean Division, served as the moderator for the event and provided her perspective on the role of conservation in The Bahamas, her home country. Dr. Steve Schill, lead scientist for TNC in the Caribbean, presented a vivid overview of how TNC applies the latest technology like drones and AI software to support conservation action for people and nature in The Bahamas and across the Caribbean.

The presentation sparked excellent conversation and questions from guests and created new connections and relationships that are already helping to advance the work of our Caribbean policy, communications, and development teams. Achieving TNC's 2030 Goals will require us to engage more people and reach new audiences, and given the success of this event, we will be making this type of event a standing side feature of our upcoming in-person Board gatherings.



Members of TNC Caribbean Board of Trustees and Caribbean Leadership Team. © Martin Morcillo/ smashpixelstudio



TNC Caribbean Lead Scientist, Steve Schill presents on the use of science and technology in conservation at TNC's Tech for Nature' Friend-raiser event in Miami. © Martin Morcillo/ smashpixelstudio

Jamaican Journalist Wins First TNC Caribbean Media Award

TNC Caribbean is partnering with the CBU to sponsor two Caribbean Media Awards that recognize outstanding journalism highlighting critical environmental issues relating to mangroves and seagrass beds and coral reefs in the region.

Carol Francis, a journalist with the Public Broadcasting Corporation of Jamaica (PBCJ), is the first recipient of TNC/Caribbean Broadcasting Union (CBU) Caribbean Media Award for Excellence in Environmental Journalism under the category of Mangrove and Seagrass Beds.

Carol received the award at the 35th CBU Caribbean Media Awards Gala held on August 13, 2024, in Placencia, Belize. Her winning entry is a 15-minute documentary titled Protecting Jamaica's Own, which examines the relationships between mangroves and crocodiles in Jamaica and emphasizes the importance of mangrove as an ecosystem.

"In Jamaica, mangrove forests are affected by competing land uses, pollution, climate change and overfishing. Crocodiles are an endangered, protected species in Jamaica," said Francis, who is currently the Program Manager at the PBCJ. "The feature looks at the interconnectivity between mangroves and crocodiles, and the importance of protecting both the mangroves and crocodiles," she explained.







 $PBCJ's\ Exclusive\ Series\ Protecting\ Jamaica's\ Own\ This\ Episode\ Crocodiles\ Protecting\ the\ Mangroves$



Dr Cleveland Sam, Director of Marketing and Communications – TNC Caribbean presenting the first TNC/CBU Environmental Journalism Award to Carol Francis of the Public Broadcasting Corporation of Jamaica. © Channel 7/CBU

Resilient Islands Close-out Celebration



Participating in the close-out panel discussion - Left to right: Dr Steve Schill, Lead Scientist, TNC Caribbean Division; Eddy Silva, Climate Adaptation Program Manager; Dr Cleveland Sam, TNC Caribbean Marketing Director. © Gustavo Ledezma



The International Federation of the Red Cross and Red Crescent Societies was a critical partner in the RI project. Left to Right: Samantha Dickson, Grenada Red Cross President and Kevin Douglas, Jamaica Red Cross Emergency Services Manager. © Gustavo Ledezma

TNC and the International Federation of Red Cross and Red Crescent Societies (IFRC) convened in Panama to commemorate the successful conclusion of the Resilient Islands, a seven-year initiative that successfully engaged over 3,000 people living in the Dominican Republic, Grenada and Jamaica in actions that help communities adapt to the escalating climate crisis.

The two-day closing event commenced with a celebration of the collaboration and an exchange of lessons learned, followed by activities fostering the partnership between the two organizations and exploring future collaboration opportunities. Attendees crafted a visual representation that depicted the Resilient Islands team as a cohesive unit, symbolizing the project's growth and progress.

Resilient Islands demonstrated the efficacy of using nature-based solutions such as restoring coastal ecosystems such as mangroves and reefs to enable communities to mitigate risk and reduce exposure to climate impacts. TNC and IFRC helped to inform policies and climate-resilient development plans that prioritize science-informed decision-making, enhance early warning systems, and anticipate and reduce impacts from climate-related disasters through adaptation strategies driven by local communities.

"The lessons learned from Resilient Islands will increase awareness of climate resilience and help scale up efforts at the local and national levels in all small island developing states across the Caribbean," emphasized Eddy Silva, project manager for Resilient Islands, at the closing celebration. "At a time when weather-related hazards and rising ocean temperatures are becoming more extreme and destructive, this program has demonstrated that mangroves, coral reefs and reforestation can save lives and livelihoods."

Partnership-based Approach needed for Nature-positive Future



Dr Joth Singh, Director of Policy and Strategic Programs - TNC Caribbean speaking during the SIDS Conference side event. Photo: @TNC



TNC's Caribbean Director of Policy and Strategic Programs, Dr. Joth Singh, presented on a new partnership-based approach to create a "Roadmap for Securing a Nature Positive Future in the Caribbean by 2030", which leverages TNC's wealth of conservation data and expertise. TNC and the Caribbean Biodiversity Fund (CBF) hosted an official side event entitled "Forging partnerships for the future: achieving the Global Biodiversity Framework 30x30 target and securing a nature-positive future for the Caribbean", at the Fourth International Conference on Small Island Developing States (SIDS4), convened in Antigua in May 2024. The event convened government officials and leaders from the private sector and NGOs for a focused discussion on achieving Target 3 of the Global Biodiversity Framework (GBF) - protecting 30% of lands, freshwaters, and ocean habitats by 2030 (aka, 30x30). The Honorable Kerryne James, Grenada's Minister of Climate Resilience, the Environment and Renewable Energy, highlighted the importance of regional dialogue to mobilize support among Caribbean SIDS to achieve the GBF's 30x30 target.

TNC's Caribbean Director of Policy and Strategic Programs, Dr. Joth Singh, presented on a new partnership-based approach to create a "Roadmap for Securing a Nature Positive Future in the Caribbean by 2030", which leverages TNC's wealth of conservation data and expertise. CBF Chair Karolin Troubetzkoy highlighted the Caribbean Challenge Initiative and CBF's role in developing regional partnerships that support collective conservation action. These presentations supported a robust panel discussion including representatives from TNC, Conservation International, the Government of Grenada, UNEP, Fauna and Flora International, and the Environmental Action Group of Antigua, which explored the roles of stakeholders, including the importance of civil society organizations in national and regional decision-making processes. Participants underscored the importance of collaborative efforts and innovative approaches for achieving GBF targets in the Caribbean, such as the data-driven Roadmap for a Nature Positive Future.

Where to from here?

The Nature Conservancy ended 2024 on a high note with the Debt Conversion Project for Marine Conservation with the Government of The Bahamas and several partners. This unlocks \$124 million for conservation work in The Bahamas over the next 15 years and creates an endowment for even longer-term outcomes.

This was a welcome counterpoint to some of the challenges we faced during the warmest year on record for our planet. This heat affects the health of corals and reefs that are so vital for the region's economy, let alone our biodiversity mission. This same heat is also the fuel for hurricanes, and we saw records broken with the early arrival of Hurricane Beryl, which impacted several of the places where TNC works in the Caribbean.

Despite these challenges, TNC remains steadfast in its commitment to scaling conservation up in the Caribbean, simultaneously meeting national agendas and contributing to TNC's global 2030 goals.

As we move through 2025, our three strategic pillars – **Ocean Management and Protection, Climate Resilience, and Coral Conservation and Restoration** remain more relevant than ever and will to continue to focus our efforts and ensure a sustainable future for the region. And we remain committed to using innovative conservation strategies driven by the best science and technologies available, while collaborating with local communities, governments, and stakeholders.

Together, with your continued generous support, we can achieve our ambitious goals and ensure a thriving future for both people and nature. Because of YOUR support, we look to the future with confidence.









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